



جامعة الخليج الطبية

GULF MEDICAL UNIVERSITY

EDUCATION • HEALTHCARE • RESEARCH



UNDERGRADUATE CATALOG

(Academic Year 2016-2017)

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1.INTRODUCTION

The GMU Undergraduate Catalog is meant to provide information and guidelines on the various services and undergraduate programs of the University. It contains sections covering admission procedures, general rules and regulations, student support services, curriculum details, departments and grading policies. Each section has a content list so that you can refer quickly to areas of particular interest to you. Every effort has been made to provide accurate and up-to-date information.

2. ACADEMIC CALENDAR

2016	Day	Events
FALL SEMESTER		
July 24	Sun	Last date to pay tuition and all other fees for the returning students
Aug 24 & Aug 25	Wed & Thu	Orientation to New Students Reopening for returning 4 th Year MBBS [Phase III Year 1] students Reopening for returning 5 th Year MBBS [Phase III Year 2] students
Aug 28	Sun	Fall Semester begins Reopening for returning II year 3 rd Semester DMD, Pharm D, BBMS & BHS students Reopening for returning 2 nd Year MBBS [Phase II Year 1] students Reopening for returning 2 nd Year BPT students Reopening for returning III year 5 th Semester DMD, Pharm D, BBMS & BHS students Reopening for returning 3 rd Year MBBS [Phase II Year 2] students Reopening for returning 3 rd Year BPT students Reopening for returning IV year 7 th Semester DMD, Pharm D, BBMS & BHS students Reopening for returning Final Year BPT students Reopening for returning V year 9 th Semester DMD, Pharm D, BBMS & BHS students
Sep 10	Sat	Arafa Day Holiday
Sep 11 & 12	Sun & Mon	*Eid Al Adha Holidays
Sep 15	Thu	<i>End of Add and Drop period</i>
Sep 29	Thu	White Coat Ceremony
Oct 02	Sun	*Islamic New Year Holiday
Oct 16	Sun	Mid Semester Examination for the 1st, 3rd, 5th, 7th & 9th Semester DMD, Pharm D, BBMS & BHS Students begins
Nov 09 & 10	Wed & Thu	GMU Annual Scientific Meeting
Nov 30	Wed	Martyr's Day Holiday
Dec 02	Fri	National Day Holiday
Dec 11	Sun	*Al Moulid Al Nabawi Holiday
Dec 11 – 29	Sun – Thu	Fall Semester Break for the 1st, 3rd, 5th, 7th & 9th Semester DMD, Pharm D, BBMS & BHS Students Fall Semester Break for the 1st, 2nd, 3rd & 4th Year MBBS Students Fall Semester Break for the I, II, III & Final Year BPT Students
2017		
Jan 01	Sun	New Year Holiday

Jan 02	Mon	End Semester Examinations for the 1 st , 3 rd , 5 th , 7 th & 9 th Semester DMD, Pharm D, BBMS & BHS Students begins Phase III Year 1 Semester 7 Examination begins Phase II Year 2 Semester 5 Examination begins
Jan 08	Sun	Phase II Year 1 Semester 3 Examination begins
Jan 14	Sat	Phase III Year 2 Semester 9 Examination begins
Jan 15 - 26	Sun – Thu	GMU Semester Break for the 1st, 3rd, 5th, 7th & 9th Semester DMD, Pharm D, BBMS & BHS Students
Jan 15	Sun	1 st Year BPT – I Sessional Examination begins 2 nd Year BPT – I Sessional Examination begins
Jan 24	Tue	Final Year BPT – I Sessional Examination begins
Jan 25	Wed	Announcement of Grades for the 1 st , 3 rd , 5 th , 7 th & 9 th Semester DMD, Pharm D, BBMS & BHS Students

SPRING SEMESTER

Jan 29	Sun	Spring Semester begin for the 2 nd , 4 th , 6 th , 8 th & 10 th Semester DMD Students Spring Semester begin for the 2 nd , 4 th , 6 th & 8 th Pharm D Students Spring Semester begins for the MBBS & BPT programs Phase III Professional Re-sit Examination begins Final Year BPT – III (2013 batch) Sessional Examination begins Commencement of APPE Training
Feb 05	Sun	Phase I Semester 1 Examination begins
Feb 12	Sun	1 st Year BPT Professional Supplementary Examination begins 2 nd Year BPT Professional Supplementary Examination begins
Feb 16	Thu	End of Add and Drop Period
Feb 20	Mon	Announcement of Results for the Phase III Professional Re-sit Examination
Mar 02	Thu	Annual Sports Day
Mar 05	Sun	Final Year BPT (2013 batch) Professional Examination begins
Mar 06	Mon	Announcement of Results – 1 st & 2 nd Year BPT Professional Supplementary Examination
Mar 10	Fri	GMU Global Day
Mar 11	Sat	GMU Literary Day
Mar 19	Sun	Mid Semester Examinations for the 2nd, 4th, 6th, 8th & 10th Semester DMD Students begins
Mar 26 – Apr 06	Sun - Thu	Spring Semester Break for the 2nd, 4th, 6th, 8th & 10th Semester DMD Students Spring Semester Break for the 2nd, 4th & 6th Semester BBMS & BHS Students Spring Semester Break for the 2nd, 4th, 6th & 8th Semester Pharm D Students Spring Semester Break for the I, II, III & Final Year BPT Students
Apr 09	Sun	Announcement of Results – Final BPT Professional Examination
Apr 24	Mon	*Israa Al Mihraj Holiday
May 21	Sun	Phase II Year 2 Semester 6 Examination begins
May 27	Sat	*Holy month of Ramadan Starts

May 28	Sun	End Semester Examinations for the 2nd, 4th, 6th, 8th & 10th Semester DMD Students begins
Jun 07	Wed	2 nd Year BPT – II Sessional Examination begins
Jun 11	Sun	Phase II Professional Examination begins
Jun 13	Tue	1 st Year BPT – II Sessional Examination begins
Jun 17	Sat	Phase III Year 2 Semester 10 Examination begins
Jun 18	Sun	Phase I Semester 2 Examination begins
Jun 25 – 27	Sun – Tue	*Eid Al Fitr Holiday
Jun 29	Thu	Announcement of Grades for the 2 nd , 4 th , 6 th , 8 th & 10 th Semester Announcement of Results for the Phase II Professional Examination
July 04	Tue	Final Year BPT Professional Supplementary Examination begins
July 06	Thu	Phase III Professional Examination begins
July 09	Sun	Phase I Professional Examination begins Final Year BPT – II Sessional Examination begins 2 nd Year BPT Professional Examination begins
July 15	Sat	Phase III Year 1 Semester 8 Examination begins
July 16	Sun	1 st Year BPT Professional Examination begins
July 23	Sun	Phase II Year 1 Semester 4 Examination begins
July 25	Tue	Announcement of Results for the Phase III Professional Examination
July 27	Thu	Announcement of Results for the Phase I Professional Examination
July 31	Mon	Last working day for the Academic Year 2016 - 17
Aug 01 – Sep 03	Tue – Sun	Summer Vacation & Eid Al Adha Holidays
Aug 06	Sun	Announcement of Results – 1 st & 2 nd Year BPT Professional Examination Announcement of Results – Final BPT Professional Supplementary Examination
Aug 10	Thu	Phase II Professional Re-sit Examination begins
Sep 04	Mon	First working day for the Academic Year 2017 – 18 Phase I Professional Re-sit Examination begins
Sep 06 & 07	Wed & Thu	Orientation to New Students
Sep 10	Sun	Fall Semester begins for the Academic Year 2017 - 18
* Islamic holidays are determined after sighting the moon. Thus actual dates of holidays may not coincide with the dates in this calendar.		
**All tuition and other fees are subject to revision by Gulf Medical University's Board of Governors in accordance with University requirements. Every year, fees are reviewed and subject to revision. As and when fees are revised, the new fees will be applicable to all enrolled and new students. The amount shown in this document represent fees as currently approved.		

3. GOVERNANCE AND LEADERSHIP

THE BOARD OF GOVERNORS

Patron:

- 1) **Mr. B. Ahmed Haji Mohiudeen**, Chairman, B.A. Group - Mangalore, India

Chairman:

- 2) **Mr. Thumbay Moideen**, Founder President, Board of Governors, Gulf Medical University - Ajman, UAE
- 3) **Prof. Hossam Hamdy**, Chancellor of Gulf Medical University - Ajman, UAE

Member / Secretary:

- 4) **Prof. Gita Ashok Raj**, Provost, Gulf Medical University - Ajman, UAE

Members:

- 5) **Prof. John Richard Raymond**, President & CEO, Medical College of Wisconsin, USA
- 6) **Dr. Lorenzo M. Leoni**, Managing Partner TiVenture (Agire Invest) Switzerland
- 7) **Dr. Mohammed Amin Al Awadi**, Assistant Undersecretary for Training & Planning – Ministry of Health, Bahrain
- 8) **Prof. Nadia Badrawi**, Vice - President and Founder – ANQAHE - Cairo, Egypt
- 9) **Dr. K. R. Shetty**, Former Principal & Prof. of Neurology, Kasturba Medical College - Mangalore, India
- 10) **Dr. Tayeb A. Kamali**, Director General, Education and Training, Ministry of Interior - Abu Dhabi, UAE
- 11) **Prof. Salem Chouaib**, Gustave Roussy, Villejuif – France
- 12) **Mr. Feroz Allana**, Director, IFFCO Group of Companies - Sharjah, UAE
- 13) **Mr. Akbar Moideen**, Vice President - Healthcare Division, Thumbay Group - Ajman, UAE.

EXTERNAL ADVISORY BOARD

Chairman:

- 1) **Mr. Thumbay Moideen**, Founder President, Gulf Medical University, Ajman, UAE

Member/Secretary:

- 2) **Prof. Gita Ashok Raj**, Provost, Gulf Medical University, Ajman, UAE

Members:

- 3) **Prof. Raja Bandaranayake**, Consultant and Visiting Professor, Medical Education, Australia
- 4) **Prof. Ed Peile**, Professor Emeritus of Medical Education, Warwick Medical School, University of Warwick, UK
- 5) **Dr. Agoston S'zel**, Rector – Semmelweis University, Budapest –Hungary
- 6) **Prof. Wojciech Zaluska**, Dean of II Faculty of Medicine with English Division - Medical University of Lublin - Lublin, Poland
- 7) **Dr. Ola Ghaleb Al Ahdab**, Pharmaceutical Advisor and Training and Development Project Manager, Registration and Drug Control Department, Ministry of Health, UAE
- 8) **Dr. Maryam S. Jaffar**, Head of Dental Services, Ministry of Health and Prevention, Dubai, UAE

4. HISTORIC PREAMBLE

The Gulf Medical University is a private University that has evolved from the Gulf Medical College, which came into existence by Decree No. 1, dated 28 January 1998, issued by His Highness Sheikh Humaid Bin Rashid Al-Nuaimi, Ruler of Ajman and Member of the Supreme Council, UAE.

5. GMU VISION

The Vision of the Gulf Medical University is to be a leading contributor to the continuous improvement of the nation's health care delivery system through the pursuit of excellence in medical education, biomedical research and health care services.

The University aspires to provide **a unique learning experience** of high quality to our students and produce graduates whose competence will help them to make a significant contribution to the health of the community through pursuit of academia, research and health care.

The University aspires to **attract the best of students** by offering a variety of excellent programs supported by quality administration and student support services.

The University aspires to be **known for excellence and impact of its research** on the educational milieu of the nation and the outcomes of clinical care.

The University aspires to be **an integral part of the community** through transfer of knowledge, continuous dialogue with the country's health care planners and enhanced community service.

6. GMU MISSION

It is the Mission of the Gulf Medical University to strengthen and promote excellence in medical education, biomedical research and patient care.

GMU is committed to **prepare a highly skilled health workforce** made up of health care professionals, health management and support workers and health science investigators in order to meet the health care needs of the nation and the region.

GMU will strive to **produce health care professionals** who will integrate the advances in research with the best clinical practices.

GMU will **promote health services**, which incorporate the latest advances in scientific knowledge in a manner that supports education and research for the benefit of the community.

7. INSTITUTIONAL GOALS

1. To provide high quality academic **programs** in Medicine and Allied Health Sciences that is recognized in and across the globe.
2. To provide a dynamic **curriculum** that fosters student centered learning, critical thinking, team work and life-long learning.
3. To enhance **learning environment** that fosters ethics, humanism, social and cultural values and service to community.
4. To provide opportunities to observe, perform and practice basic clinical/**professional skills** competently with an understanding of basic and clinical sciences within the health care delivery system.
5. To provide and enhance instructional delivery and **student support services** that address students' needs.
6. To provide opportunities and develop physical **facilities for research** by faculty and students.
7. To enhance the professional and personal **development of faculty, staff and students**.
8. To establish **academic partnerships** with regional and international universities and hospitals engaged in health sciences education.
9. To extend **health care facilities** of high clinical and ethical standards to the local population and people from other Emirates.
10. To establish and strengthen the **institutional processes** that enhances the quality and effectiveness of the programs.

8. STATEMENT OF VALUES

The vision statement and the ten areas of commitment shall provide direction for GMU and inspire the university community to stretch beyond its present level of institutional effectiveness.

Gulf Medical University shall affirm the following values and beliefs:

1. **Commitment to Students:** Each student is individually important and has unique needs and goals. The university shall support students in clarifying their lifelong goals, provide personalized attention and service, assist them in developing their talents and skills, recognize their culture, heritage and lifetime experience, and challenge them to become independent, lifelong learners.
2. **Commitment to Educational Excellence:** Effective teaching brings quality to learning and success is measured by the success of the students. The university shall provide and be accountable for the quality of its educational programs and student support services.

3. **Commitment to Access and Diversity:** The University shall offer equal access to education through an open door admissions policy and maintain the diversity of the community it serves.
4. **Commitment to Faculty and Staff:** Everyone contributes to institutional success by working as a team member towards common goals. All members of the university community will have the opportunity to grow through professional development.
5. **Commitment to a Quality Campus Environment:** A safe, and clean learning environment that is characterized by integrity, clear communications, an open exchange of ideas, appreciation for personal worth, involvement in decision-making and respect for all individuals.
6. **Commitment to the Community:** As members of a larger community, the university shall play an important role in enhancing the quality of life for all members of the community and support opportunities for health development and growth.
7. **Commitment to Effective Use of Resources:** The University shall use resources effectively to provide quality education and research services to students and the community.
8. **Commitment to Research Initiatives:** The University shall pursue excellence in biomedical research that shall have an impact on education and the outcome of clinical care.
9. **Commitment to Health Care Services:** The University shall support health care practice that incorporates the latest advances in knowledge in a manner that supports education and research for the benefit of the community.
10. **Commitment to Effective Governance:** Carry out the responsibilities as the governing body of the University by monitoring and reviewing the operations of the University in a planned manner.

9. LICENSE AND RECOGNITION

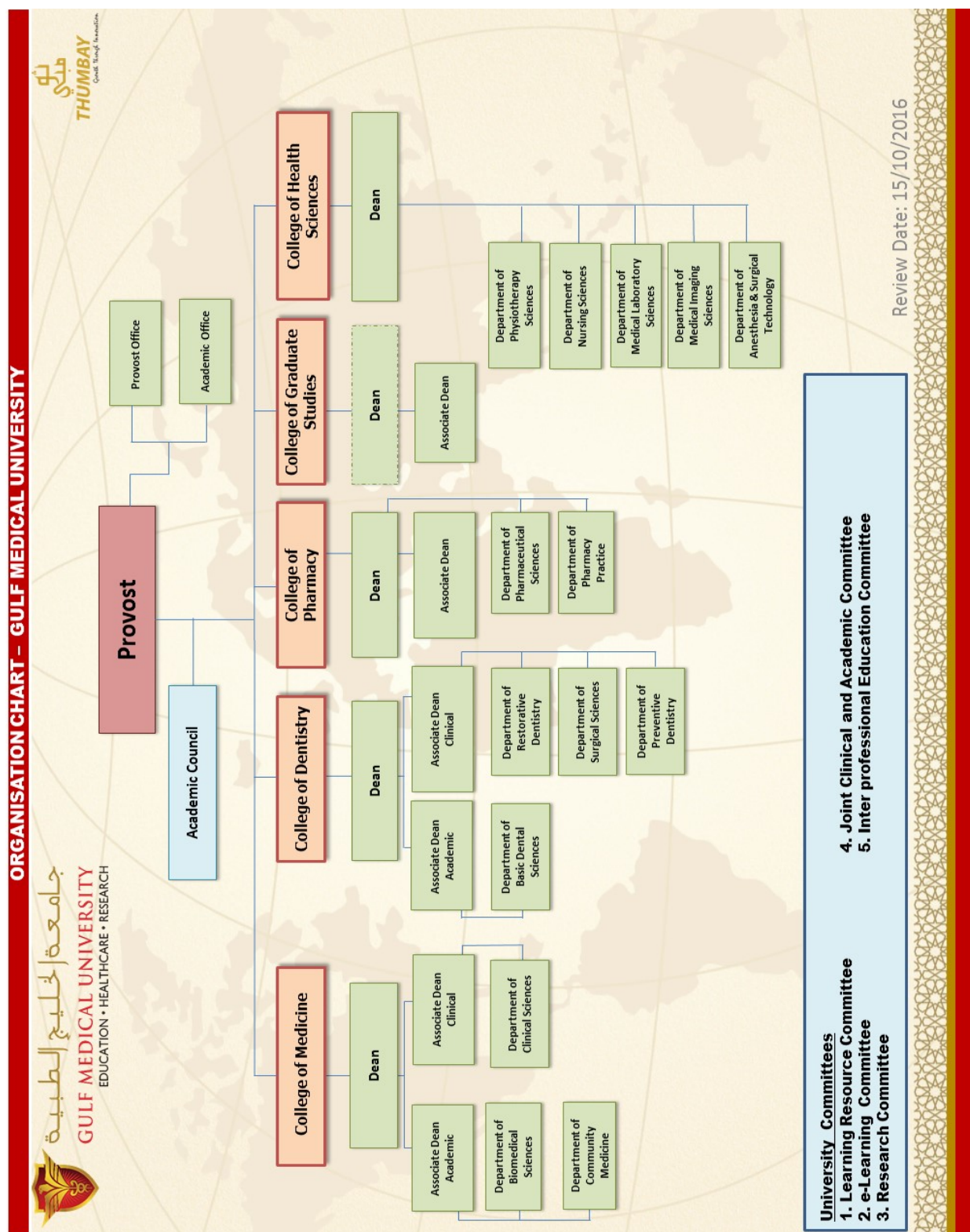
Gulf Medical University is a Commission for Academic Accreditation (CAA) licensed; Private, Higher Education Institute located in Ajman the Northern Emirates of UAE offering Bachelor and Master level programs in Medicine and Allied Health Sciences. All programs offered by the Gulf Medical University have received initial accreditation from the Commission for Academic Accreditation, Ministry of Higher Education & Scientific Research (CAA, MOHE&SR), Abu Dhabi, UAE.

Sl. No	Program	Date of Initial Accreditation (DD/MM/YY)
1	Bachelor of Medicine & Bachelor of Surgery (MBBS)	20/06/2004, 2008
2	Bachelor of Physiotherapy (BPT)	14/06/2005, 2010
3	Doctor of Pharmacy (PharmD)	01/08/2008
4	Doctor of Dental Medicine (DMD)	01/09/2008, 2014
5	Master of Science in Clinical Pathology (MS CP)	01/01/2009
6	Master in Public Health (MPH)	01/07/2010
7	Master in Toxicology (M Tox)	01/07/2010
8	Diploma in Toxicology (Dip Tox)	01/07/2010
9	Masters in Human Reproductive Biology (MHRB)	01/12/2012
10	Master of Physical Therapy (MPT)	01/03/2013
11	Bachelor of Biomedical Sciences (BBMS)	01/10/2013
12	Associate Degree in Preclinical Sciences (ADPCS)	01/01/2014
13	Bachelor of Health Sciences – Medical Laboratory Sciences (BHS-MLS)	01/06/2014
14	Bachelor of Health Sciences – Medical Imaging Sciences (BHS-MIS)	01/06/2014
15	Bachelor of Health Sciences – Anesthesia & Surgical Technology (BHS-AST)	01/06/2014
16	Bachelor of Health Sciences – Nursing Sciences (BHS-NS)	01/06/2014

Gulf Medical University is listed in the WHO World Directory of Medical Schools and in the Health Professions Education Directory, Eastern Mediterranean Regional Office (EMRO), WHO website <http://www.emro.who.int/hped>

Gulf Medical University is listed as an accredited/recognized medical school in the International Medical Education Directory (IMED) published by Foundation of Advancement of International Medical Education and Research (FAIMER) at the website. <http://imed.ecfmg.org>

10. ORGANIZATION CHART



11.0 UNIVERSITY RESOURCES & SERVICES

The GMU Information and Learning Centre provide year-round reference and information services and assists students in the development of effective search strategies. Staff members at the Learning Centre assist students in identifying new and additional resources, confirming citations and providing instructions on how to use online databases and search engines.

11.1 Vision

To achieve its Vision, the library shall acquire, manage and link information resources both physical and virtual and provide quality instruction to empower users to benefit from the full potential of the universe of knowledge. The information technology professionals and library staff shall together ensure that the GMU library shall meet the complex information needs of the 21st century for life-long learners to achieve excellence in undergraduate, graduate and professional studies.

11.2 Mission

The Mission of the GMU Information & Learning Centre is to provide resources and instructional material to support the delivery of the curriculum. It also encourages appropriate practices in accessing and using information consistent with the GMU policies. The GMU Learning Centre is committed to maintaining the state-of-the-art information technology infrastructure to meet the current and changing information needs of the GMU community.

11.3 Library

The library at the GMU campus is a modern facility strategically located on the first floor of the Information and Learning Center. Library resources are accessed by faculty members, staff members and the students for stipulated periods according to the circulation policy.

11.3.1 Timings:

The library remains open from Sunday through Thursday between 8.00 am to 10.00 pm and on Saturday between 8.30 am to 6.00 pm (Except on official holidays). The official timings are further extended during study periods and examinations at the request of the students.

11.3.2 Library Resources

- Books
- E-Books (Access Medicine)
- Journals (Online)
- Journals (Hard copy)
- CDs
- Video Tapes
- Online Databases:
Proquest, Access Medicine, Cochrane, UpToDate, USMLEasy, Micromedex

11.3.3 Library Orientation

During the Library Orientation Program at the beginning of each academic year, the library staff member/s provides orientation and bibliographic instructions to the library users on the following topics:

- Issue of official username and passwords.
- Use of various electronic resources.
- Availability of resources in particular subjects / areas of interest.
- Library rules and regulations and library services.

11.3.4 Audio Visual Equipment

The library has the facility for viewing medical video tapes and CD ROMs. A collection of VHS tapes and CDs on latest medical topics are available.

11.3.5 Scanning and Printing

Scanning and printing of learning materials without infringing the copyright laws are provided in the library.

11.3.6 Photocopy

Photocopy services are provided at a nominal charge of one dirham per 10 pages. The Information and Learning Center abides by existing national and international copyright laws.

11.3.7 Journal Article Request Service

The GMU users can get copies of Journal articles from the library on request. For getting a copy of the article, users have to submit a Journal Article request to the library in the prescribed form. The request form is available on the GMU library website. The applicant shall get a copy of the article within three working days, if it is available in the GMU library.

11.3.8 Cataloguing

The GMU library follows the Anglo-American Rules (AACR 2) for Cataloguing and the National Library of Medicine USA coding for its classification system. The GMU library is using “AutoLib System Software”.

11.3.9 Online Public Access Catalogue (OPAC)

The GMU Library provides Online Public Access Catalogue (OPAC) through the library website (www.gmu.ac.ae/library). The user can search the catalogue by author, title, subject, ISBN or a key word.

11.3.10 Security Gates

GMU central library has two security gates (3M library security system) for the protection of the library resources.

3M Library Security System: The 3M Library Security System consists of several components including 3M Tattle-Tape, circulation accessories, and a detection system. The key to the effectiveness of the system is protecting the library resources with 3M Tattle-Tape security strips. The security systems set off an alarm when any book is removed from the library without issuing it.

11.4 Library Policy and Procedures

- Adequate library and learning resources are essential to teaching and learning. The purpose of the library is to support the academic, research, health services and continuing education programs of the university by providing students, faculty and staff members with the information resources and IT services they need to achieve their educational objectives.
- The library staff members work closely with the department chairs, faculty members, students and community patrons in determining their needs in terms of additional resources and services.
- Gulf Medical University maintains an adequate level of professional librarians and support staff at the Gulf Medical University Campus and Gulf Medical College Hospital and Research Centre and the affiliated MoH hospitals.
- The Gulf Medical University selects and purchases the required print and non-print materials in adequate quantity, including the lease of information databases suitable for the instructional needs of the university with the goal of providing access to the maximum amount of relevant information available within the constraints of the libraries' budget.
- Gulf Medical University provides automated systems in the following areas: online public access catalog, circulation, cataloging and acquisitions.
- Gulf Medical University provides bibliographic instruction to the university community and interested groups, including orientation programs, personal assistance, computer-assisted instruction and printed information in the form of flyers.
- Gulf Medical University provides regular and extended hours of service to suit the needs of its learning community.
- Gulf Medical University maintains and continues to improve the facilities and equipment for housing and using the print / non-print materials.
- Gulf Medical University evaluates the resources and services annually via student surveys, reviews of holdings by library staff and faculty, comparison with similar institutions, and direct feedback from all users.

11.5 Library Rules and Regulations

Students are required to abide by the following code of conduct while using library resources.

- Separate areas have been designated in the library for men and women students. The reading rooms and computer facilities have been arranged accordingly.
- Students are expected to use the designated reading rooms and computer areas separately marked for men and women in the library.

- Students who are seen in areas other than those specifically designated for their use are liable to face disciplinary action. Video library facilities shall be arranged on separate days for men and women students.
- Students are not allowed to sit on the steps or passages near the library or in other vacant parts of the University.
- Students are reminded that defacing or stealing library material is classified as personal misconduct and is liable to invite censure.
- Personal laptops are allowed into the library; however, other personal items and handbags may be deposited in the area provided before entering the library. No foods and drinks are allowed inside the library.
- The students are requested to carry Identity Cards at all times. These are coded and are required to issue books.
- Books may be issued from the GMU campus only. Books may be reserved using online services. Books may be issued for limited periods up to 2 weeks at a time. The library in GMCH & RC and other affiliated hospitals do not issue books. Instructions on how to access subscribed online text books and databases are prominently displayed.
- The library staff is available at all times for locating books, CDs, Videos, Journals and any other library services (such as inter-library loan, accessing electronic resources, other cooperative arrangements, orientation, training).
Photocopying class handouts is permitted. However, international laws regarding image reproduction and copyright laws shall be strictly followed.

11.6 Circulation Policy and Procedures

GMU circulation policies are designed to permit prompt and equitable access to library materials. The staff at the circulation service desk is focused on meeting the needs of the library users.

1. Circulation privileges are accorded to those holding valid GMU identification cards. The ID must be presented on request in order to use the Library facilities and services. Cards are not transferable.
2. Two books will be issued for a maximum period of two weeks. This can be renewed once as long as there is no holding request for the same book.
3. Short loan for reference books will be allowed ranging from one hour to a maximum of three days.
4. A fine of AED 1.00 per day will be levied for over-due books. If the fine is more than the cost of latest edition of the book, the user has to pay the cost of the latest edition of the book including procuring expenses equivalent to 10% of cost of book. Users cannot borrow further books until due items are returned and penalties paid.
5. The users are not allowed to make any marking / underlining / highlighting in the library books and journals. They should not indulge in any act that may damage the books / journals. If any page is torn away or damage is caused to any book or journal, the borrower will be asked to pay the penalty one and half times the cost of the book / journal and also be referred to the disciplinary committee for further action.

6. In case of loss, users have to replace the latest edition of the new book or pay the cost of the latest edition of the book including procuring expenses equivalent to 10% of cost of the book.
7. Reservation may be placed for loaned item.
8. The Library will not issue a “No Dues Certificate” until all books are returned and fines are paid.
9. Students are encouraged to take the responsibility of returning the books on time. Accumulation of fines and non-payment may result in non-issue of Admit cards before examinations.

11.7 Multimedia Labs

The Computer Center located on the ground floor of the Information and Learning Center of Gulf Medical University shall provide a basic technological infrastructure for all academic activities.

The Multimedia Lab includes the provision for networks, intra-GMU links and appropriate hardware and software for administration and academic needs. The Multimedia Lab shall ensure support of a full time IT instructor so that the technological infrastructure is used effectively. For this purpose, among others, the Center assumes a significant role in user support and training.

11.8 Network Infrastructure

The Local Area Network (LAN) Infrastructure encompasses all academic offices, lecture halls, laboratories, administrative & faculty offices. The network provides high bandwidth servicing data, voice & video accessories, and is connected to the Internet through two DSL lines, which is protected behind a secured firewall & monitored 24 X 7.

The Multimedia Lab is a state-of-the-art data center, which houses the GMU servers, and the backbone network switches and houses the data and software required for administrative packages as well as fulfilling other faculty, staff and student uses.

All GMU students shall be provided individual accounts so that they can access the system to obtain current information on all academic matters, access online learning materials and tools, use discussion forums and interact with faculty. Users can also use the Web mail to access their e-mail through the Internet. The video conferencing facilities enable video meetings and distance learning.

11.9 Wi-Fi Network

All wireless access to university networks shall be authenticated by Information Technology Security (ITS) approved methods. Faculty / staff members, students and visitors at the university can only access the wireless network using this encrypted network.

11.10 Online Resources

GMU has an online e-learning facility to enhance the learning process and help students improve their knowledge by offering additional instructional material/s. It allows students to access the facility from the campus as well as hostels and residences. The Center focuses on the creation of an environment where all students will have easy access to information resources by providing innovative technologies and learning resources.

11.11 Servers & Supports

All the computers within the campus are connected to high end rack servers which itself is supported by a power back up of 3 hours and monitored round the clock. The servers are installed with antivirus software, which is updated regularly, and entry is restricted to authorized members only.

11.12 IT Training

Appropriate training sessions are being conducted for all students at regular intervals around the year to update them with the use of the latest software and learning tools in the field of Information Technology.

11.13 Internet Services

The GMU Information and Learning Center provides Internet facilities for all students, faculty and staff members. Search can be carried out freely by individual users or with the help of the librarian. Users can print their search results or directly send the documents by e-mail to any registered e-mail accounts.

11.14 Technology Support for Learning

All the class rooms are equipped with adequate technology support comprising computers, projectors to learning, meet the needs of the University community with local access port for both faculty members and students. A protected Wi-Fi is available to facilitate usage of portable IT gadgets among the students and faculty / staff members within the campus.

11.15 IT Support Team

The Gulf Medical University IT Support Desk (Help Desk) is manned by a technical support team that provides prompt, knowledgeable, courteous computing support services through the phone, in person and email. The Help Desk is available to everyone who uses the GMU Computing Service and is the first point of contact for any technical queries.

One of the tasks of the Help Desk is to help members of the GMU to be more productive through the use of the available IT facilities.

GMU IT Support Team constantly collects valuable feedback about the services and its quality in a bid to improve what they offer. The GMU IT Support Team was set up to handle users' initial calls for technical assistance.

11.16 User accesses and Security

Access to operating systems is controlled by a secure login process which ensures:

- No display of any previous login information e.g. username.
- Limiting the number of unsuccessful attempts and locking of the account if exceeding the limit.
- The hiding of password characters by symbols.
- Display of a general warning notice that only authorized users are allowed.
- All access to operating systems is via a unique login id that will be audited and can be traced back to each individual user.
- All University systems, vulnerable to attack by malware shall be protected by antivirus software wherever possible unless a specific exclusion has been granted and alternative measures have been taken to provide the same degree of protection.
- Centrally Managed Kaspersky Antivirus 8.0 using Kaspersky Security Center protects client systems running under Microsoft Windows XP, Vista 7, Windows 7, Windows 8 and server systems running under Windows Server 2003, 2008 R2 from all types of malicious programs. The product is designed specifically for high-performance corporate servers that experience heavy loads.

11.17 E-Learning at GMU

The GMU e-learning has an effective system that caters to a self-paced personal learning through resources available over the Internet.

The Gulf Medical University uses Moodle as an open source e-learning platform. Students can access the e-learning system from any location of their choice, since the system is completely online. The University has campus-wide Wi-Fi services to facilitate e-learning practices. Computers with Internet access have been provided in addition at all clinical training sites, in the library, student common rooms and residence halls.

Students are provided instructions on the proper use of the e-learning medium. Accessing protected computer accounts or other computer functions, knowingly transmitting computer viruses and unethical use of GMU access is prohibited.

To be granted the use of a computer account, users have to agree to abide by universal guidelines on use of the computing and Internet services.

Access to the use of computer facilities is permitted only through authorized computer accounts. A computer account consists of a unique login ID and a password. Students are requested to keep their password secret. To activate the GMU account, the user shall be instructed to go to the GMU website and follow the instructions.

11.18 Student IT Support Policy

The IT Support Policy provides guidelines on IT support to all its stakeholders including faculty & staff members, students and various other relevant stakeholders. This policy encompasses IT support (Hardware / Software / Allied Services) for IT resources and infrastructure owned and managed by Gulf Medical University. IT policies also cover faculty owned and student owned hardware and Software.

11.19 Electronic Recording Policy

Electronic Recording Policy provides guidelines regarding digital archiving of the processes that are recorded as per the university policy. This helps in providing archives of various academic and extra-curricular activities. This policy applies to all electronic recording equipment that monitors or record processes / facilities of Gulf Medical University.

Gulf Medical University has installed electronic recording equipment's like Video cameras and / Micro phone/s, CCTV camera/s, Web cameras etc. for digital archiving, as required of academic, examination, non-academic process/es and / or other extracurricular activities in the University in compliance with university policy and other federal laws.

11.20 Procedures for IT Support for faculty-owned and student-owned hardware & software

- IT Department shall provide limited hardware and software support for faculty-owned and student-owned hardware and software.
- IT Department shall also assist in recommending required compatible hardware and software for meeting the academic / research / other scholarly activities for its registered users.
- IT Department shall provide support to configure the student-owned and faculty-owned hardware to access the University Network.
- IT Department shall provide assistance in installing or up gradation of licensed software owned by the student / faculty / staff members in their own IT devices.
- IT department shall provide assistance in downloading and installing open source software/ free downloadable software's in faculty-owned and student-owned devices in compliance with existing local and international laws as amended from time to time.

- IT department shall not provide support in any case that leads to violation and infringement of the terms and conditions of warranty of the faculty-owned or student-owned hardware/software.
- IT department shall endeavor to guide the students / faculty / staff members regarding methods to avail the required support service/s from the nearest authorized service provider with ease and to their satisfaction.
- IT personnel providing hardware / software support shall also guide the concerned stakeholder/s to facilitate the backup of data in storage device(s), if required before seeking the resolution of hardware or software services/support from an authorized vendor.
- IT personnel shall provide assistance in resolution of problems related to networking, internet, email accounts, network operating system accounts, browsers, and access to Learning Management Systems of the University.
- IT personnel shall provide onsite-service to student-owned and faculty-owned devices only in the IT support office/s designated for the purpose.

12.0 GMU PHYSICAL FACILITIES

12.1 Class Rooms

The lectures are usually held in the four main lecture halls, Lecture Hall 1–4 on either side of the main building. In addition the lecture rooms (5–24) are used in teaching classes of smaller size for lectures, group discussions, seminars and tutorials. Small group learning class rooms (1–6) are available in the GMU Information & Learning Center for conducting group based activities like CBL, PBL, Projects and Seminars that encourage collaborative learning among students.

12.2 GMU Testing Center

The state-of-the-art GMU testing center is the latest addition to the ever-growing facilities of Gulf Medical University. This unit is capable of accommodating students for regular mid semester / end semester examinations, IELTS examinations administered online.

With a capacity of holding up to 88 participants, the center has all modern facilities. To meet the standards required for international testing regulations, invigilators are supported with adequate number of CCTV cameras in each testing halls. The testing center has a data processing room where post-test analysis of scores is done and the central valuation room for the examiners to evaluate paper based tests. Access to the center and examination halls is user-friendly to people with special needs (wide elevator and doors).

12.3 Common Rooms & Lockers

Separate common rooms with locker facility are available for male and female students. Locker keys may be obtained from the Administrative office. In the event of any damage to the lockers or loss of keys, a fine of AED 100 is levied. Only materials pertaining to academic and learning needs are to be kept in the lockers; strict disciplinary action will be taken if any objectionable material is found in the lockers.

12.4 Masjid

Separate entrance for men and women with ablution facilities are provided in the Masjid located in the campus.

12.5 Mail Box

All incoming postal mail will be kept in the designated area close to the photocopying section.

12.6 GMU Hostel

Separate hostel facilities for male and female students are provided on request. Resident wardens in the hostels take care of student's needs. Indoor games and Internet facilities are available for recreation and study.

12.7 Transportation

Bus facilities, to commute from residences to GMU and other clinical locations, are available to the hostel students free of cost. Day scholars are provided transport on request and on payment of stipulated fees. Students requiring transport facilities should contact the Transport Department for all transport needs.

12.8 Class Room & Laboratory Protocols

Separate entrances are designated for men and women students in the Lecture Halls and Laboratories. Students are strictly advised to follow these.

- Attendance will not be granted to late comers to lectures and laboratories.
- Students are not allowed to bring food and drinks into the lecture rooms and laboratories.
- Lab coats must be worn only during laboratory work, ambulatory and bedside teaching activities.
- Students should use equipment and property of the institution with care and should not indulge in destruction or damage to any of the equipment & property. If a student is found to be responsible for any such damage, the repair / replacement cost for the same shall be recovered from the student.
- Students who require audio visual equipment for presentations should organize this with the help of the Administrative Assistant for Student Affairs. Students should fill in the request form for this and hand over the same at least 3 days before their presentation.
- Visitors are not permitted to attend lectures and enter laboratories except with the prior written approval of the Dean of the College.
- Students should leave the lecture halls as soon as the lectures are over. Linger on in the hall alone or in groups is not permitted. Lecture halls will be locked soon after the lectures are over and will be opened only 15 minutes before the commencement of the lectures.

12.9 Student Identification

- All students are required to submit passport - size colour photos to be affixed on their ID cards.
- The Student ID must be worn at all times and must be presented on demand in the campus, clinical sites and during examinations.
- Loss of ID cards must be reported to the Dean's office and a replacement card can be obtained after payment of AED 25.

12.10 University Entrance

Separate entrances are designated for men and women students. These should be strictly adhered to. Parents, relatives and friends who drop the students in the University and drive them back are requested to respect this and drop or collect the students only from the

designated areas. Students are not allowed to walk through the main foyer doors or sit in the entrance area. This area is meant for guests and visitors to the University.

12.11 Car Parking in the Campus

- Cars should be parked in the allocated positions for men and women students separately in an orderly manner. Only cars belonging to the President, Trustees and other visiting dignitaries are allowed to be parked in the main portico area. The University administration reserves the right to tow away any vehicle, which has been parked in an unauthorized manner or place.
- Dangerous driving practices, creating inconvenience or risk to others and damage to property within the University campus is punishable offences.

12.12 Information on Safety Issues

GMU adheres to and adopts the guidelines on safety issues, which covers safety aspects related to the Laboratory and handling of chemicals. Excerpts from the University Laboratory Safety Manual are provided.

13.0. STUDENT SERVICES

13.1 Office of Student Affairs

The Office of Student Affairs supports and complements the mission of the University and its academic programs by creating a comfortable, safe and secure environment that contributes to the success of the students' educational mission and personal growth. It helps to involve students in the university community by providing appropriate student organizations, activities, publications and opportunities for interaction with faculty, staff and peers outside the classroom.

Office of Student Affairs coordinates all matters concerning Undergraduate Student Council, Student Welfare, Career Guidance, Alumni Affairs, Student Health, Placement, Student Discipline, Residential Halls, Transportation, Student Publication, Student Activities and Sports. Student may approach the Dean / Associate Dean – Student Affairs to resolve issues regarding student affairs and student support services.

13.2 Counseling Services

13.2.1 Student Counseling Policy

All counseling sessions are conducted with the utmost regard to confidentiality and all records kept by the Counselor are treated as confidential.

Information shared with a counselor is not released to anyone outside the Counseling Services office. Information may be released under the following exceptions, if,

- The student gives written permission to disclose information (In that instance, the student determines what information is to be released and to whom) or
- A student presents a danger to himself / herself or to another person. Student's meeting with a counselor shall be encouraged to discuss any concerns that they have about confidentiality of personal information.

13.2.2 Academic Counseling Policy

Student advising is part of the academic duties of every faculty member. The Dean or Chair of the Academic Unit assigns faculty advisors so that the number of advisees per faculty advisor is as small as possible.

Each student shall have an appointed full-time faculty advisor. This does not preclude informal advising with a student regarding progress in the courses being taught.

Student advising is not limited to registering students, but encompasses all aspects of academic advising, including selection of electives, counseling on any academic difficulty/ies or problem/s encountered, and monitoring the academic progress of advisees.

An academic advising guide has been prepared by the Provost's office and is distributed to all academic advisors.

Students shall receive notification of their faculty advisor and a listing of all students and advisors shall be made available in the Office of Academic Advising and Counseling Center in the Office of Student Affairs. Prior to actual course registration, faculty members shall be available to advisees during their scheduled office hours to discuss academic programs and issues related to vocational, career and educational goals. A record shall be kept of the advisory meetings. Faculty advisors assigned to the Office of Advising and Counseling Center shall coordinate further referrals.

Adjunct faculty is not to be responsible for the academic advisement of their students.

13.2.3 Personal Counseling Policy

Professional counseling is available for personal problems (i.e. financial, career, home, health etc.) especially if students have;

- Physical complaints when no medical causes can be found.
- Excessive anxiety for examinations / accommodation / or home sickness.
- Lack of interest in daily activities.
- An unusual amount of irritability or fear to mingle with friends.
- Not being able to cope with studies.
- Inability to concentrate on daily activities.
- Personality changes that can't be explained such as sudden shifts in mood / behavior.

Referrals are made to the Office of Admission & Registers regarding regulations concerning questions of transfer; to the Accounts Office regarding financial aid issues; to the Career Counselor's Office regarding career or job placement issues, by the Dean, Student Affairs who attends to all student activities, discipline issues, university policy etc.

13.3 Student Activities Policy

The Office of Student Affairs offers comprehensive programs and services that foster an educational environment conducive to the overall development of students.

The Office of the Dean - Student Affairs oversees all departments catering to various student services and serves as an advocate for students in the development of University policy. The Office is also responsible for administering the University code of conduct (Judicial Policies).

Information on specific program/s and service/s particularly athletic, cultural and literary like GMU Global day celebrations, Intercollegiate Sports meet, debates, presentations at scientific meetings, health exhibitions shall be published in the Student Handbook,

Undergraduate Catalog and displayed prominently on Student Notice Boards, the University Website and MYGMU e-platform to encourage participation by all students in these events.

Participation in Health Camps, Oral Health camps, Health campaigns for cancer awareness, Running for health, Well Baby contests sponsored by GMU and its affiliated hospitals is encouraged and provides opportunities for learning in community – oriented settings.

13.4 GMU Undergraduate Student Council

The GMU Undergraduate Student Council comprises of representatives elected from the various academic programs.

GMU Undergraduate Student Council shall have representation in faculty committees such as Academic Council, College Council, Student Affairs Committee, Curriculum Development Committee, Library Council, Sports, Culture & Literary Committee, Campus Health, Campus Safety and Security Committee.

The Undergraduate Student Council comprises of the elected class representatives. Each class will elect student representatives who will coordinate the curricular and extracurricular activities of the class.

Each class shall elect two representatives comprising one male and one female student.

13.5 Student Publications

Students write, edit and publish a newsletter (Previously ‘GMU Pulse’, under name change at present), which is an essential feature that chronicles student life at GMU. The students’ newsletter expresses their sense of commitment and degree of participation as well as their awareness of the educational and social issues that affect life in the GMU. The newsletter reflects the composition of GMU and it appears in two languages - Arabic and English.

13.6 Career Service Office

The University has a full time Career Counselor.

13.7 Career Service Policy

The Career Counselor shall be available during office hours on all working days throughout the year; Students are encouraged to meet the Career Counselor and discuss their career plans.

All students are encouraged to avail of clinical training at sites available in the country and abroad during the summer break.

The students are encouraged to seek help in preparing their curriculum vitae.

Students shall also be helped in filling application forms for taking various licensing examinations being held in the country and abroad.

The career counselor collects and disseminates information about the various hospitals, institutions and universities offering internship and residency programs in the country and abroad.

The career counselor shall encourage graduates to keep in touch with the alma mater through the University's website, correspondence and telephone.

The Career Counselor maintains a register of GMU Alumni. The Career Office also keeps a record of employment of all Alumni and seeks evaluation of the GMU graduate as an employee.

The Career Counselor shall submit reports periodically to update the Alumni records in the Institutional Research Unit (IRU).

13.8 Financial Aid Office

Information on financial aid may be obtained from the Chief Accounts Officer of the Gulf Medical University.

Refer to Section 17.18 under Financial Aid and Scholarships in this document for further details.

13.9 Health Services

A Campus Medical Center is available in the GMU campus. The aim of the Campus Medical Center is to complement the academic mission of GMU and to provide educational, supportive and first aid health care to the GMU campus community, which includes students, staff, and faculty. Great emphasis is exercised to make the campus a healthy and safe place to study, work and live.

With two full time nurses having MOH License, the Center provides Short-term emergency care for acute & chronic illnesses, for accidents within campus, and ambulance services: emergency services to GMCH/ a local hospital as per need.

The Center is adequately equipped and has wheel chairs, stretchers, and first aid kits.

Students will be referred to the concerned specialist or to the emergency department in accordance with the nature of illness.

The Coordinator designated for each year of the different programs, will be informed about student's adverse health effects for relating the illness to any academic absence.

13.10 Health Services Policy

In order to streamline the health care needs of GMU students, a Campus Medical Center has been established. This will provide care in the following areas:

- First Aid Service at GMU
- Referral to GMC Hospital
- Coordination between GMU & GMC Hospital
- Blood collection for medical fitness tests on admission and before posting to clinical training sites.

The Student Management System has been linked with Information System of the hospital for easy identification of students for treatment.

As part of the registration procedures, every student must be covered for health services under one of the two following plans. Plan – I is compulsory for all GMU sponsored students. This provides medical benefits under the GMCH&RC Health Card. Plan II is compulsory for others who are officially enrolled in health insurance plans with their families.

Students shall be required to present the Student ID as identification document on registering for medical treatment.

The Office of the Academic Affairs at GMCH&RC shall make arrangements for access to health care facilities at the hospital and to encourage students to undergo vaccination.

It is compulsory for all GMU students to have a valid Third Party Liability (TPL) Insurance from beginning till successful completion of the program.

Students shall be informed regarding the benefits of immunization and testing for communicable diseases and encouraged to undertake appropriate immunizations and tests.

13.11 Mandatory Testing for Infectious Diseases

All enrolled students on all programs offered by Gulf Medical University are required to undergo a Mandatory Testing for Infectious Diseases before entering the hospital for their clinical training. No student will be permitted to commence their clinical rotations if they pose a health risk to themselves and their patients.

All the following tests shall be conducted in CABRI, GMU. If any test has been previously conducted, students are requested to submit the report to CABRI. Testing is required for Antibody titres for Infectious diseases:

a. Protective Ab Panel: (TC:6911) <ul style="list-style-type: none"> • Anti HBs • Varicella IgG & IgM • Rubella IgG & IgM • Mumps IgG & IgM • Measles IgG & IgM 	b. Infectious Screen Panel (TC:6250) <ul style="list-style-type: none"> • HIV • HCV • HBsAg 	c. Vaccinations <ul style="list-style-type: none"> • BCG, HBV and Tetanus are mandatory • Appropriate vaccines recommended by clinicians are mandatory.
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GMU students posted in Hospitals are required to be further certified for Medical Fitness before starting the clinical rotations. Kindly be informed that:

- If the student has a medical issue and he/she did not inform about it during his/her application, the student will be terminated immediately from the program.
- If the student develops a disease during the training, his/her condition will be reviewed by a committee appointed to decide on the possibility of continuation of the program or not. This process will be followed for both communicable and non-communicable diseases.
- If at any time it is discovered that a student has a communicable disease, then the Clinical Training will be suspended immediately till his/her case has been reviewed by the committee appointed for the same.

Needle prick

If a student gets a needle prick the following procedures shall be taken:

- The needle shall be sent to the laboratory in a closed and sterile container to check for HIV and HBV.
- The prick site shall be cleaned and dressed.
- A blood sample at zero time shall be taken from the student to check for HIV and HBV and shall be documented in the student file in the college as well as with the Academic Office.
- A second blood sample shall be taken after 30 days of the needle prick to check for HIV and HBV and shall be documented in the student file in the college as well as with the Academic Office.
- A third sample shall be taken after 6 months of the needle prick to check for HIV and HBV and shall be documented in the student file in the college as well as with the Academic Office.
- If at any time the student shows signs of infection with HIV, HBV or HCV he/she shall undergo immediate treatment and his/her training will be suspended till proven free of disease.
- If the needle is found to have traces of HIV or HBV in it (after step 1) then the student's training will be suspended till proven free of disease.
- If the student does not show any sign of infection after the needle prick, the Clinical Training program can be resumed with a condition to keep him/her under observation for signs of illness. And when the student has to change the rotation as part of the training program the information of the needle prick shall be handed over to the respective Head of Department.

Note: Requisition forms for mandatory testing with the corresponding fee is available with the respective Colleges and listed among the details of fees under Section 17.11 Fees for other services of this catalog.

13.12 Student Records Policy

- The University shall maintain confidentiality of student records. The student records shall be stored in safe custody and only authorized personnel shall have access to them.
- Transcripts shall be issued only upon the signed request of the student or his / her parent. Under no circumstances shall the student records be released to any third party without the knowledge of the student or the student's parent.
- All official records shall be signed by the Provost of the University whose signatures only shall be recognized outside the bounds of GMU.
- A progress report shall be sent regularly to the contact address to inform the parents / guardians about their ward's progress.
- The records policy shall be published in the Student Handbook for information. The Office of the Dean, Admissions & Registers shall maintain the student's permanent academic record and requests to view the individual's record must be made to the Office of the Dean, Admissions & Registers.
- The program office of the academic program in which a student is enrolled also maintains student files that are considered non-permanent. Students have the right to access their program file except documents where access has been waived (e.g. recommendation forms).
- A student must submit an application to the Dean, Admissions & Registers office to obtain access to his/her program academic record.

The Office of the Dean, Admissions & Registers shall ensure

- The continuous maintenance and back up of student records with one set stored in a secure location, preferably off-site, in a vault or fireproof cabinet.
- Special security measures to protect and back up computer-generated and stored records.
- Confidentiality of records.
- A definition of what constitutes the permanent record of each student; the right of access to student records, including students' access to their own records.
- The authority to manage and update student records.
- The appropriate retention and disposal of records.

13.13 Information Release Policy

- The University shall neither deny nor effectively prevent current or former students of the University the right to inspect and review their educational records.
- Students shall be granted access to their records within a reasonable period of time after filing a request. Students have the right to request the amendment of their

education records to ensure that the records are not inaccurate, misleading or otherwise in violation of their privacy or other rights.

- The University shall not release or provide access to education records, except “directory” information, without the written consent of the student to any individual, agency or organization.
- The University is, however, authorized to provide access to student records to Campus officials and employees who have legitimate educational interests in such access. These persons are those who have responsibilities in connection with the academic, administrative, or service functions of the university and who have reason for using student records connected with their academic or other university responsibilities. Disclosure may also be made to other persons, Ministry and Government officials or organizations under certain conditions (e.g. as part of an accreditation or program evaluation; in response to a court order, audit in connection with financial aid; or to institutions to which the student is transferring).
- The University shall designate the following items as “directory” information: student name, addresses, telephone numbers, major field of study, participation in officially recognized activities and sports, dates of attendance, degrees and awards received, most recent previous school attended and photograph. The University may disclose any of those items without prior written consent, unless notified in writing on the form available from the Dean, Admissions & Registers.
- Confidentiality of information shall be highly respected at GMU. If students wish that any of their education record shall be available to anyone, a consent form shall be available in the Office of Registers & Records. If there is no consent form, information will not be disclosed except to the appropriate person(s) in connection with an emergency, if the knowledge of such information is necessary to protect the health or safety of the student or other persons.
- Under no circumstances shall the student records be released to any third party without the prior knowledge of the student or the student’s parent.

13.14 Student Research Policy

Policies and Procedures for Conducting Research in GMU and its Affiliated Hospitals

GMU aspires to be known for the excellence and the impact of its research on the educational milieu of the nation and the outcome of clinical care and is committed to the attainment of its mission to:

- Prepare health science investigators in order to meet the health care needs of the nation and the region,
- Produce health care professionals who will integrate the advances in research with the best clinical practice.
- Promote health services, which incorporate the latest advances in scientific knowledge in a manner that supports education and research for the benefit of the community.

The university policies clearly describe the research activities and the procedures, which have been established to assure continued strong research productivity and require all Chairs of departments to ensure that all new academic, research and technical staff and all new research students are informed of the policy and its operation. One or more supervisors will supervise all student research that is conducted as a part of the course/program requirement.

The Research Committee is the principal research body of the Gulf Medical University and the Ethics Committee is the initial approving body for the research and experimental activities to be taken up by the Gulf Medical University and shall be responsible for the following:

- Where animal experiments are involved the globally accepted standards of laboratory animal care shall be followed.
- Carrying out research experiments involving human subjects shall conform to the ethical standards laid down in the Declaration of Helsinki
- While collecting data from human subjects for research purpose all necessary conventions and formalities shall be adhered to.

13.14.1 Definitions

GMU conducts research of both a Social/Behavioral nature, as well as biomedical research both in the university and all its affiliated hospitals. As such, the organization follows the Geneva Convention regulations regarding human subject's research. The following definitions are used in regard to "research" and "human subjects":

Research means a systematic investigation*, including research development, testing and evaluation, designed to develop or contribute to generalizable** knowledge. Activities that meet this definition constitute research for purposes of this policy, whether or not they are conducted or supported under a program, which is considered research for other purposes. For example, some demonstration and service programs may include research activities.

*The term systematic investigation refers to a study in which there is a research protocol to be followed in its conduct, specific research questions to be answered, or a hypothesis to be addressed.

**The term generalizable refers to a study designed to draw conclusions beyond the specific instances being studied, inform public policy, or generalize findings.

Human subject means a living individual about whom an investigator (whether professional or student) conducting research obtains (1) Data through intervention or interaction with the individual, or (2) Identifiable private information.

Intervention includes both physical procedures by which data are gathered (for example, venipuncture) and manipulations of the subject or the subject's environment that are performed for research purposes. Interaction includes communication or interpersonal contact between investigator and subject.

Private information includes information about behavior that occurs in a context in which an individual can reasonably expect that no observation or recording is taking place, and information which has been provided for specific purposes by an individual and which the individual can reasonably expect will not be made public (for example, a medical record). Private information must be individually identifiable (i.e., the identity of the subject is or may readily be ascertained by the investigator or associated with the information) in order for obtaining the information to constitute research involving human subjects.

Human subject means an individual who is or becomes a participant in research, either as a recipient of the test article or as a control. A subject may be either a healthy human or a patient.

13.14.2 Ethics Committee

The Ethics Committee is established to review all projects and activities that involve human subjects. The Ethics Committee reviews all research proposals for potential ethical concerns like the following:

- Does the research project involve any foreseeable legal risks, or does it involve any risk of physical, psychological or social distress to participants?
- Does the research project involve the collection or use of body tissues or body fluids (including excreta) from humans or animals?
- Does the research project involve the collection or use of data collected from human or animal participants?
- Does the research project involve the collection of data through the direct observation of human subjects?
- Does the research project involve the collection of data through the indirect observation of human subjects?
- Does the research project involve the administration of any drug, food substance or placebo to human or animal subjects?
- Does the research project involve exposing human or animal participants to any abnormal or painful physical or sensory stimuli (including auditory, visual and olfactory stimuli)?
- Does the research project require human or animal participants to undergo abnormal physical, psychological or emotional stress (including dehydration, exercise, sensory deprivation, confinement or sleeplessness)?
- Does the research project involve exposing staff, postgraduate research students or participants to topics or issues that might cause embarrassment (Including exposure to controversial, offensive or illegal ideologies)?
- Does the research project involve withholding information by deceiving participants?
- Does the research project involve participants who are potentially vulnerable or unable to give informed consent (including children under the age of 18, people with learning difficulties, people with cognitive disorders and people with debilitating illnesses)?
- Informed Consent Form attached with the proposals are reviewed for the following areas of concern:

- a. Does the methodology protect the rights and welfare of subjects?
- b. Does the risks to the subjects far outweigh the potential benefits to either the subject directly or to scientific understanding in general

13.14.3 Informed Consent

Whenever any research activity involves human subjects, it is mandatory that the investigator, or his or her duly certified representative, obtain the informed consent of any and all such subjects. The informed-consent procedures and documents employed for this purpose should not contain exculpatory language through which the subject is made to waive, or to appear to waive, any of his or her legal rights, or to release GMU or its representatives from any liability for negligence.

To ensure maximum protection of human subjects and to ensure compliance with GMU and Research Committee regulations, investigators must follow the procedures outlined herein. While write a detailed protocol for the proposed activity, this protocol should contain copies of informed-consent documents to be used, and a complete explanation of how informed consent will be obtained. Informed-consent documents should be designed to cover the specific study.

The following items ensure that all necessary elements of a Consent Form(s) have been addressed.

- Header contains name of institute/venue of study
- Identity of the Principal Investigators and contact information
- Research topic/question, nature of participation, duration, and involved procedures are clearly stated
- Risks and benefits of participation are clearly stated
- Provision of feedback to the participants is mentioned
- Provision for participant anonymity has been made
- Confidentiality of participant information has been assured
- Provision made for withdrawal and refusal to respond
- Data storage, length of retention, and method of disposal are clearly stated
- Provision made for distribution of a copy of the consent form to all participants

[An example of an Informed-Consent document may be obtained from your Supervisor]

13.15 Third Party Liability (TPL) Insurance

As per the Ministry of Health (MoH) guidelines, all students undergoing clinical training at various hospitals are required to have a valid Clinical Training – Third Party Liability (TPL) Insurance. This insurance cover is restricted to training hours only and / or whilst participating in indoor and/or outdoor university activities under university's expressed authorization including transportation from and to training centre by university vehicles.

14.0 STUDENT'S RIGHTS AND RESPONSIBILITIES

14.1 Student Rights

All students must become familiar with the academic policies, curriculum requirements, and associated deadlines as outlined in the University Catalog, student handbook & course syllabi. The academic advisor shall advise the student on all matters related to their program of study and will aid the student in the interpretation of policies whenever necessary.

However, it shall ultimately be the student's responsibility to meet all stated requirements for the degree and the policies related thereof. It is also the student's responsibility to actively utilize their campus email and the university web site, observe netiquette, observe the policies on internet use as published and made available in the Student Handbook as it tends to be a major communication resource and is often the primary form of communication between students.

Gulf Medical University shall maintain an academic environment in which the freedom to teach, conduct research, learn, and administer the university is protected. Students will enjoy maximum benefit from this environment by accepting responsibilities commensurate with their role in the academic community. The principles found herein are designed to facilitate communication, foster academic integrity, and defend freedom of inquiry, discussion, and expression among members of the university community.

14.1.1 Rights in the Pursuit of Education

Students will have the right:

- To pursue an education free from illegal discrimination and to be judged on the basis of relevant abilities, qualifications, and performance;
- To fair and impartial academic evaluation and a means of recourse through orderly procedures to challenge action contrary to such standard;
- To an academic environment conducive to intellectual freedom; and
- To a fair and orderly disciplinary process.

14.1.2 Right to Access Records and Facilities

Students will have the right:

- To access their own personal and educational records and to have the university maintain and protect the confidential status of such records, as required by appropriate legal authority;
- To have access to accurate information regarding tuition fees and charges, course availability, general requirements for establishing and maintaining acceptable academic standing, and graduation requirements;

14.1.3 Right to Freedom of Association, Expression, Advocacy & Publication

Students will have the right:

- To free inquiry and expression;
- To organize and join association/s to promote their common and lawful interests; and
- To be able to protest in a manner which does not obstruct or disrupt teaching, research, administration, and / or other activities authorized by the university.

14.1.4 Right to Contribute to University Governance and Curriculum

Students will have the right:

- Through student representatives, to participate in formulating and evaluating institutional policies.

14.2 Student Responsibilities

Students shall be expected to balance these rights with the responsibility to respect the learning environment for others and for themselves and to make their best effort to meet academic challenges undertaken. Students will be responsible for compliance with the University Code of Conduct.

The standards of professional behavior in the educational setting are related to three domains:

1. Individual Performance;
2. Relationships with students, faculty and staff members, patients, community and others; and
3. Support of the ethical principles of the medical profession.

Individual performance:

- Demonstrates educational experiences (i.e., exams, clinics, rounds, small group sessions, appointments at the clinical skills center.
- Adheres to dress code consistent with institutional standards.
- Maintains appropriate relationships with students, faculty, staff, patients and community.
- Establishes effective rapport.
- Establishes and maintains appropriate professional / personal boundaries in all learning situations.
- Is respectful at all times to all parties involved.
- Demonstrates humanism in all interactions.
- Respects the diversity of race, gender, religion, sexual orientation, age, disability and socio-economic status in all interactions.
- Resolves conflict in a manner that respects the dignity of every person involved.
- Uses professional language being mindful of the environment.

- Maintains awareness and adapts to differences in individual patients including those related to culture and medical literacy.
- Supports ethical principles of the medical profession.
- Maintains honesty in all personal and professional dealings.
- Contributes to an atmosphere conducive to learning and is committed to advance scientific knowledge.
- Protects patients' confidentiality, while handling health information.

14.3 GMU Honor Code

The students of Gulf Medical University Ajman, must recognize that they form an essential part of the medical profession and society. The 'Honor Code' lays emphasis on students' behavior to meet the expectation of their profession, family and general public. The Honor Code is administered at the White Coat Ceremony. Students are required to read the pledge and sign an undertaking to observe all the rules as specified in the code.

14.4 Salient Features of the Honor Code

The code strives to emphasize the importance of ethical behavior and compassion in patient care. It helps a professional to understand the importance of the power of healing when all health care professionals work together as a team. It guides students to interact among their fellow colleagues and mentors. The honor code formally acknowledges a sense of trust, responsibility and professional behavior among students, staff and faculty members.

14.5 Breach of Honor Code

The following acts are considered as violation of the honor code:

1. Illegal, unethical and inappropriate academic conduct or professional behavior with colleagues and mentors either in college, hospital campus or in any professional gathering.
2. Failure to maintain confidentiality of a patient's health data.
3. Failure to provide the highest level of patient care.
4. Failure to report any situation where the 'honor code' has not been followed or failure to take appropriate action when the 'honor code' has been violated.

14.6 Effects of Committing an 'Honor Offence'

When a student, member of the administrative staff or faculty commits an offense against the rules of the honor code, it becomes violation of the 'code' and is termed as an Honor Offense. The matter must be reported to the Dean of GMU. The report would be taken to a committee formed by student and faculty representatives. Once the person is proved guilty, the Committee will initiate appropriate action depending on the degree of the offense.

15. CORPORATE AGREEMENTS

Gulf Medical University (GMU) has established agreements with Ministry of Health (MoH) and Health Authority Abu Dhabi (HAAD) for the clinical training of Gulf Medical University students.

GMU has also established arrangements with Ajman Municipality and Ajman Forensic Laboratory for the clinical training of students in the Master's Program.

16. ADMISSION POLICY, REQUIREMENTS AND PROCEDURES

16.1 Policy Statement

Gulf Medical University admits students irrespective of their nationality, gender, or religion, to all the activities and programs offered by the university.

The University stands for the highest moral, ethical and academic standards consistent with the heritage and cultural background of the United Arab Emirates and aspires for national and international recognition of its programs and degrees.

The University sets high standards for previous academic performance to attract students of high caliber to meet and exceed the standards of high retention and low attrition and outstanding academic performance required to fulfill the accreditation standards for every program offered by the University.

16.2 Undergraduate Admission Requirements

16.2.1 Bachelor of Medicine & Bachelor of Surgery [MBBS]

1. Applicants shall meet all admission criteria for entry into the respective programs offered by the University, as laid down in the Standards (2011) published by the Commission for Academic Accreditation (CAA), Ministry of Higher Education & Scientific Research (MOHE&SR), UAE.
2. The applicant must have completed a minimum of 12 years of education in school and passed subjects in Physics, Chemistry and Biology in the Higher Secondary examination.
3. The applicants from UAE educational system must have secured an aggregate of 90% or above marks as per UAE Secondary School Education Standards.
4. The applicants from Non-UAE educational systems must have secured an aggregate equivalent to UAE 90% or above [as per International Grade Conversion Table published by WES].
5. Applicants from the Indian sub-continent (India, Pakistan, Sri Lanka & Bangladesh) educational system must have secured an aggregate minimum of 75% or above [First Division] in the Higher Secondary School Examination.
6. Students who have pursued their Higher / Senior Secondary School Education as per UK system must have passed at least two of the three science subjects (Physics, Chemistry, Biology) in 'AS' or 'A' levels provided they have passed in all the three subjects in their 'O' level. The minimum grade requirement is two C in 'AS' or 'A' level.
7. Applicants from the International Baccalaureate (IB) educational system must have a score of 28 points or above provided they have passed all the three science subjects in Grade 10 and advised to take SAT Physics with a minimum score of 550.

8. Applicants with an American Diploma must have a score of 85% or above provided they have scored a minimum of 550 in Biology Molecular (Biology-M), Physics and Mathematics in the SAT II examination.
9. All UAE Nationals who are graduates of the National Service Program shall be treated equal to the High School Graduates in the year in which they have graduated the National Service Program.
10. All applicants must complete 17 years of age on or before the 31st of December in the year of admission and shall not be more than 28 years of age.
11. The applicant must have proficiency in spoken and written English. The applicant must have passed the English language proficiency test such as TOEFL, IELTS, PTE Academic or Cambridge ESOL. A minimum score of 550 TOEFL (CBT 210, iBT 78), IELTS Academic 6.0, PTE A (36-44), Cambridge ESOL (41) or any other standardized internationally recognized test approved by the Commission for Academic Accreditation (CAA), Ministry of Higher Education & Scientific Research (MOHE&SR), UAE.
12. The applicants from Arabic educational system must have completed a Medical Terminology course before they enter into any Undergraduate program offered by GMU.
13. The applicant will be required to appear for a written Multiple Choice Questions (MCQs) test followed by a personal interview before the GMU Admissions Committee.
14. The Admissions Committee shall evaluate all applicants for both cognitive and non-cognitive traits demonstrating their aptitude for the chosen area of study.

16.2.2 Doctor of Dental Medicine [DMD]

1. Applicants shall meet all admission criteria for entry into the respective programs offered by the University, as laid down in the Standards (2011) published by the Commission for Academic Accreditation (CAA), Ministry of Higher Education & Scientific Research (MOHE&SR), UAE.
2. The applicant must have completed a minimum of 12 years of education in school and passed subjects in Physics, Chemistry and Biology in the Higher Secondary examination.
3. The applicants from UAE educational system must have secured an aggregate of 85% or above marks as per UAE Secondary School Education Standards.
4. The applicants from Non-UAE educational systems must have secured an aggregate equivalent to UAE 85% or above [as per International Grade Conversion Table published by WES].
5. Applicants from the Indian sub-continent (India, Pakistan, Sri Lanka & Bangladesh) educational system must have secured an aggregate minimum of 70% or above [First Division] in the Higher Secondary School Examination.
6. Students who have pursued their Higher / Senior Secondary School Education as per UK system must have passed at least two of the three science subjects (Physics, Chemistry,

Biology) in 'AS' or 'A' levels provided they have passed in all the three subjects in their 'O' level. The minimum grade requirement is two C in 'AS' or 'A' level.

7. Applicants from the International Baccalaureate (IB) educational system must have a score of 28 points or above provided they have passed all the three science subjects in Grade 10 and advised to take SAT Physics with a minimum score of 550.
8. Applicants with an American Diploma must have a score of 85% or above provided they have scored a minimum of 550 in Biology Molecular (Biology-M), Physics and Mathematics in the SAT II examination.
9. All UAE Nationals who are graduates of the National Service Program shall be treated equal to the High School Graduates in the year in which they have graduated the National Service Program.
10. All applicants must complete 17 years of age on or before the 31st of December in the year of admission and shall not be more than 28 years of age.
11. The applicant must have proficiency in spoken and written English. The applicant must have passed the English language proficiency test such as TOEFL, IELTS, PTE Academic or Cambridge ESOL. A minimum score of 550 TOEFL (CBT 183, iBT 65), IELTS Academic 5.5, PTE A (36-44), Cambridge ESOL (41) or any other standardized internationally recognized test approved by the Commission for Academic Accreditation (CAA), Ministry of Higher Education & Scientific Research (MOHE&SR), UAE.
12. The applicants from Arabic educational system must have completed a Medical Terminology course before they enter into any Undergraduate program offered by GMU.
13. The applicant will be required to appear for a written Multiple Choice Questions (MCQs) test followed by a personal interview before the GMU Admissions Committee.
14. The Admissions Committee shall evaluate all applicants for both cognitive and non-cognitive traits demonstrating their aptitude for the chosen area of study.

16.2.3 Doctor of Pharmacy [PharmD]

1. Applicants shall meet all admission criteria for entry into the respective programs offered by the University, as laid down in the Standards (2011) published by the Commission for Academic Accreditation (CAA), Ministry of Higher Education & Scientific Research (MOHE&SR), UAE.
2. The applicant must have completed a minimum of 12 years of education in school and passed subjects in Physics, Chemistry and Biology in the Higher Secondary examination.
3. The applicants from UAE educational system must have secured an aggregate of 80% or above marks as per UAE Secondary School Education Standards.
4. The applicants from Non-UAE educational systems must have secured an aggregate equivalent to UAE 80% or above [as per International Grade Conversion Table published by WES].

5. Applicants from the Indian sub-continent (India, Pakistan, Sri Lanka & Bangladesh) educational system must have secured an aggregate minimum of 60% or above [First Division] in the Higher Secondary School Examination.
6. Students who have pursued their Higher / Senior Secondary School Education as per UK system must have passed at least two of the three science subjects (Physics, Chemistry, Biology) in 'AS' or 'A' levels provided they have passed in all the three subjects in their 'O' level. The minimum grade requirement is two C in 'AS' or 'A' level.
7. Applicants from the International Baccalaureate (IB) educational system must have a score of 28 points or above provided they have passed all the three science subjects in Grade 10 and advised to take SAT Physics with a minimum score of 550.
8. Applicants with an American Diploma must have a score of 85% or above provided they have scored a minimum of 550 in Biology Molecular (Biology-M), Physics and Mathematics in the SAT II examination.
9. All UAE Nationals who are graduates of the National Service Program shall be treated equal to the High School Graduates in the year in which they have graduated the National Service Program.
10. All applicants must complete 17 years of age on or before the 31st of December in the year of admission and shall not be more than 28 years of age.
11. The applicant must have proficiency in spoken and written English. The applicant must have passed the English language proficiency test such as TOEFL, IELTS, PTE Academic or Cambridge ESOL. A minimum score of 550 TOEFL (CBT 183, iBT 65), IELTS Academic 5.5, PTE A (36-44), Cambridge ESOL (41) or any other standardized internationally recognized test approved by the Commission for Academic Accreditation (CAA), Ministry of Higher Education & Scientific Research (MOHE&SR), UAE.
12. The applicants from Arabic educational system must have completed a Medical Terminology course before they enter into any Undergraduate program offered by GMU.
13. The applicant will be required to appear for a written Multiple Choice Questions (MCQs) test followed by a personal interview before the GMU Admissions Committee.
14. The Admissions Committee shall evaluate all applicants for both cognitive and non-cognitive traits demonstrating their aptitude for the chosen area of study.

16.2.4 Bachelor of Biomedical Sciences [BBMS]

Bachelor of Health Sciences [BHS]

Bachelor of Physiotherapy [BPT]

1. Applicants shall meet all admission criteria for entry into the respective programs offered by the University, as laid down in the Standards (2011) published by the Commission for Academic Accreditation (CAA), Ministry of Higher Education & Scientific Research (MOHE&SR), UAE.

2. The applicant must have completed a minimum of 12 years of education in school and passed subjects in Physics, Chemistry and Biology in the Higher Secondary examination.
3. The applicants from UAE educational system must have secured an aggregate of 80% or above marks as per UAE Secondary School Education Standards.
4. The applicants from Non-UAE educational systems must have secured an aggregate equivalent to UAE 80% or above [as per International Grade Conversion Table published by WES].
5. Applicants from the Indian sub-continent (India, Pakistan, Sri Lanka & Bangladesh) educational system must have secured an aggregate minimum of 55% or above [First Division] in the Higher Secondary School Examination.
6. Students who have pursued their Higher / Senior Secondary School Education as per UK system must have passed at least two of the three science subjects (Physics, Chemistry, Biology) in 'AS' or 'A' levels provided they have passed in all the three subjects in their 'O' level. The minimum grade requirement is two C in 'AS' or 'A' level.
7. Applicants from the International Baccalaureate (IB) educational system must have a score of 28 points or above provided they have passed all the three science subjects in Grade 10 and advised to take SAT Physics with a minimum score of 550.
8. Applicants with an American Diploma must have a score of 85% or above provided they have scored a minimum of 550 in Biology Molecular (Biology-M), Physics and Mathematics in the SAT II examination.
9. All UAE Nationals who are graduates of the National Service Program shall be treated equal to the High School Graduates in the year in which they have graduated the National Service Program.
10. All applicants must complete 17 years of age on or before the 31st of December in the year of admission and shall not be more than 28 years of age.
11. The applicant must have proficiency in spoken and written English. The applicant must have passed the English language proficiency test such as TOEFL, IELTS, PTE Academic or Cambridge ESOL. A minimum score of 500 TOEFL (CBT 180, iBT 64), IELTS Academic 5.0, PTE A (36-44), Cambridge ESOL (41) or any other standardized internationally recognized test approved by the Commission for Academic Accreditation (CAA), Ministry of Higher Education & Scientific Research (MOHE&SR), UAE.
12. The applicants from Arabic educational system must have completed a Medical Terminology course before they enter into any Undergraduate program offered by GMU.
13. The applicant will be required to appear for a written Multiple Choice Questions (MCQs) test followed by a personal interview before the GMU Admissions Committee.
14. The Admissions Committee shall evaluate all applicants for both cognitive and non-cognitive traits demonstrating their aptitude for the chosen area of study.

Documents required at the time of submitting application for Undergraduate Admission

- Application Form dully filled by the applicant.
- Attested copy of Higher Secondary / Senior Secondary School transcripts (students who studied in UAE must submit Grade 10, 11 & 12 transcripts).
- Original Score card / Report of English Language Proficiency Test of not more than two years (TOEFL / IELTS Academic / PTE A / Cambridge ESOL) validity.
- Applicant from the United Arab Emirates shall submit a copy of the Emirates ID.
- Applicant shall submit a copy of the Equivalency Certificate of Higher Secondary school (Applicant who have passed Grade 12 from the UAE Educational System are exempted and are not required to submit the equivalency certificate). Applicants from outside UAE are required to obtain Equivalency Certificate of Higher Secondary school from the Ministry of Education, UAE.
- Applicant shall submit a copy of Good Conduct Certificate.
- A True copy of the applicant's passport with 6 months or more validity.
- Fifteen recent passport-size [35 mm wide by 45 mm high] colour photographs of self.
- All applicants from Iraq shall submit a letter from Iraqi Embassy, UAE certifying the authenticity of the Iraqi curriculum studied.
- In addition, the transfer students shall submit the following documents:
 1. True copy of transcripts from the institution/ s, university/ ies that the student previously attended.
 2. Detailed course syllabus including program learning objectives and course learning outcomes, credits, duration, semester, contact hours & credit hours for all courses of the program.

Documents required after Admission

- Every student is required to submit a self-attested photocopy of a valid passport and page showing a valid visa (GCC nationals are exempted from submitting copy of the stamped visa page. However, they shall submit self-attested copy of their National ID).
- Every student is required to submit all academic documents and official transcripts / credits / grades / marks duly attested by the Ministry of Education, UAE and Ministry of Foreign Affairs, UAE or UAE Embassy in their country on admission into the program.
- Every student is required to submit a self – attested photocopy of the Emirates ID within 2 months from the date of admission.
- Every Dental student of Indian nationality is required to submit an “Eligibility Certificate” from the Dental Council of India, New Delhi within 2 months from the date of admission.
- Every student is required to submit a Medical Fitness Certificate issued from GMC Hospital & Research Centre (GMCH&RC) Ajman, UAE within two weeks from the date of admission.
- Every student is required to submit a written pledge agreeing to comply with all University rules and regulations as amended from time to time.

Non submission of the above mentioned document/s shall be treated as incomplete (conditional) admission and hence the progression of such students may be withheld.

16.3 Admission Process

This is carried out in several stages:

- 1) **Advertisement in the media:** Information in the media shall include details of the colleges of the university programs, admission criteria and the link to the online registration form.
- 2) **Scrutiny of information:** The Admissions Committee scrutinizes the credentials of the applicant with reference to the high school education: courses, grades in the qualifying examination and the overall suitability of the applicant for admission into the program. The committee shall also inform the applicant regarding the need for any additional documents that may be required.
- 3) **Short listing:** Applicants whose credentials have been accepted as adequate by the Admissions Committee are informed about the date and time for a personal interview that would be conducted in Gulf Medical University, Ajman. GMU provides necessary help concerning visa applications for students residing outside UAE.
- 4) **Personal Interview:** The Admissions Committee of GMU shall conduct the personal interview. The committee follows a standard protocol for the interview that will last approximately 45 minutes. The conversation during the interview will be conducted in English. This will be in an informal atmosphere and the applicant will be given ample opportunity to respond to the questions in a relaxed manner. After the personal interview, the Admissions Committee will submit its recommendations to the Provost concerning the suitability of the candidate for admission.
- 5) **Provost Approval:** The Provost of GMU will finalize admissions after studying the recommendations of the Admissions Committee. The decision of the Provost on matters concerning admissions shall be final.
- 6) **Academic Advising:** GMU is committed to provide academic advising in order to advise students in selection and pursuit of academic programs consistent with their life goals and the available opportunities at the university.
- 7) **Medical Fitness:** Students admitted to GMU are required to submit a Medical Fitness certificate soon after they have registered and enrolled. The Medical Examination for fitness in this connection will be carried out in GMC Hospital & Research Centre (GMCH&RC) Ajman. Testing for antibody titres to infectious diseases is included as part of this process.
- 8) **Enrollment:** Candidates who are finally selected for admission are required (within the time announced on notification of their selection) to submit a letter of acceptance to the Provost, along with the fee in cash or by demand draft in favor of Gulf Medical University, Ajman payable at Ajman, UAE. Failure to comply with this requirement will result in cancellation of the admission.

16.4 Transfer Admissions Policy and Procedures

Students shall be considered for transfer only as per the following Transfer Admissions Policy of the University:

- Only students from a federal or licensed institution in the UAE or a recognized Foreign Institution of higher learning shall be eligible for admission by transfer.
- All transfer students shall meet the English Language proficiency requirements of the program to which they are transferred.
- All transfer students shall submit official transcripts before admission to the Program to which they are transferred.
- All transfer students shall submit official transcripts of credit/s earned from all institution/s of higher education previously attended before admission to the undergraduate programs applied.
- Only students who are in good academic standing (a minimum cumulative grade point average of 2.0 on a 4.0 scale, or equivalent) for transfer to an undergraduate program of study similar to that from which the student is transferring shall be accepted for admission.
- Students who are not in good standing shall be transferred only to a program in a field different from the one from which the student is transferring.
- The University shall transfer undergraduate program credits only for courses relevant to the degree that provide equivalent learning outcomes and in which the student earned a grade of B (2.0 on a 4.0 scale) or more;
- The University shall inform applicants for transfer admissions or re-admission of the transfer of credits earned for previous courses.
- The University shall limit transferred credits to less than 50% of the total credits required for the completion of the program.
- The University shall not grant credit twice for substantially the same course taken at two different institutions.
- The University shall allow the transfer of credits for clinical training only when done in the UAE; in exceptional circumstances, in which case, waiver of this condition shall be sought from the CAA, MoHE & SR before admission.

16.5 Transfers within GMU

The students' wishes are taken into consideration when applying to the programs of Gulf Medical University. However, they will be allowed to transfer to one of the other programs available in the university according to established rules based on the recommendations of the Admissions Committee.

16.6 Re-admission

Students who are on leave for a period of one year or more must apply for re-admission to the program through the Admissions Office.

- **Students in Good Standing:** Students who are absent or on approved leaves, must apply for re-admission before they will be permitted to register for the current semester.
- **Students Suspended for Misconduct:** Students who have been rusticated from the university and under probation must apply for readmission and may be readmitted after serving the suspension period.
- **Students on academic probation:** Students who fail to meet the minimum GPA requirement but have satisfied all the other requirements may be allowed to register as a non-matriculate student for a probationary period. Non matriculated students who achieve a minimum GPA of 2.0 can be readmitted, provided they meet all the other requirements.

16.7 Recognition of Prior Learning (RPL) Policy

This policy shall apply to all GMU qualifications including those on the National Qualifications Framework. Recognition of Prior Learning (RPL) is a method of arrangements [leading to award of credit] that considers whether learners can demonstrate that they can meet the assessment requirements for a unit of knowledge, understanding or skills they already possess and do not need to develop through a course of learning. Also, Recognition of Prior Learning is the acknowledgement of a person's competencies gained through any or combination of formal or informal training and education, work experience, general life experience.

GMU shall recognize that applicants come to training programs with varying amounts of knowledge, skill and experience that requires to be taken into account when considering how much 'advance standing' Recognition of Prior Learning a person has towards a particular qualification at the time of enrolment. However, relevant and sufficient evidence must be submitted before the RPL process is initiated. The following guidelines must be met before submitting an application for RPL: (1) The candidate must read and understand the course/unit learning outcomes; assess one's existing knowledge and skills for the course/unit to ensure that only relevant and sufficient evidence for each competency is gathered before submission. (2) The evidence will be evaluated on the basis of quality not quantity.

Policy

The RPL process will be made known to all course participants prior to commencement of a course available in the handbook. The RPL process shall be available for all course participants who wish to apply for the same. This shall be a formal assessment process and a charge shall be levied for the assessment of all RPL portfolios.

Procedure

1. During the enrolment process GMU shall advise all applicants that RPL is available.
 - a. Provide information on the RPL process to all applicants [RPL Handbook].
 - b. Provide self-assessment forms if required. Forms shall be made available indicating types of evidence needed for an RPL assessment. All evidence provided is to be certified.

2. An assessor shall conduct the assessment using the completed self-assessment forms and enclosed portfolio of documents.
 - a. An interview with the applicant is conducted if required. In addition to the document portfolio, assessment of an individual's competence may also include professional conversations; observation and questioning; supplementary assessment tasks; assessment without training; work samples; and documents to show and support skill.
 - b. The assessor shall verify the evidence available before making a judgment.
3. The applicant shall be notified of the results of RPL by letter or email using a standard RPL Outcome Template.
4. The assessor must evaluate all documents and pass them to the Admissions Office to record details in the college database.
5. Certification of units granted RPL should be listed on the applicant's Record of Result.

The Provost, Dean of the respective academic unit and the Office of Admissions and Registers shall be made aware of the responsibilities for the consistent implementation of this policy/procedure and this policy shall be monitored and reviewed regularly.

17. STUDENT FINANCE

17.1 Student Finance Policy

The University publishes in the Undergraduate Catalog, the Student Handbook and other publications the university's financial policy towards tuition fees and other payments for student services provided.

All tuition fees shall be deposited before completing the registration process either in cash or by Demand Draft / Cheque payable to GMU due on the date of registration for new admissions. Students in the University rolls must pay all fees before commencement of the academic year.

Students who are unable to pay the full tuition fees for registration may pay the tuition fee in two installments after obtaining approval from the management. The first installment shall be payable on the date of completion of registration (dated current) and the second installment shall be paid by a postdated cheque due four months after the first payment. A penalty shall be levied on all returned cheques. The hostel fees along with a security deposit shall be paid in full before occupying the room in the hostel.

Payment for other student services shall be levied in addition to tuition fee towards provision of visa, conduct of examinations, issue of ID and library cards and reissue of a lost ID or library card, lab coat, convocation, issue of certificates verifying bonafides of the student, issue of duplicate academic transcripts / course certificate / duplicate hall ticket; replacement of a lost hostel key and annual rent for lockers provided.

Two or more children of the same family shall be entitled each to a 5% sibling scholarship in the tuition fees provided they are registered in the same academic year. The request shall be supported by the following documents; an application in person, a copy of the schedules of the course being attended and a copy of their student ID. Other details shall be provided by the Office of Accounts.

The University shall arrange scholarship for students who have secured more than 95% marks in their final higher secondary examinations and if approved by the sponsoring agencies.

17.2 Tuition Fees* (Academic Year 2016 – 2017)

Program	Tuition Fee if Paid Yearly	Tuition Fee if Paid in Two Installments
MBBS Phase – I [1 st Year]	AED 120,000	AED 61,500
MBBS Phase – II Year 1 [2 nd Year]	AED 120,000	AED 61,500
MBBS Phase – II Year 2 [3 rd Year]	AED 115,000	AED 59,000
MBBS Phase – III Year 1 [4 th Year]	AED 115,000	AED 59,000
MBBS Phase – III Year 2 [5 th Year]	AED 114,000	AED 58,500

DMD 1 st year	AED 110,000	AED 55,000
DMD 2 nd Year	AED 110,000	AED 55,000
DMD 3 rd Year	AED 95,000	AED 47,500
DMD 4 th Year	AED 97,500	AED 48,750
DMD 5 th Year	AED 80,000	AED 40,000
Pharm D 1 st year	AED 60,000	AED 30,000
Pharm D 2 nd Year	AED 60,000	AED 30,000
Pharm D 3 rd Year	AED 55,000	AED 27,500
Pharm D 4 th & 5 th Year	AED 50,000	AED 25,000
BPT 1 st Year	40,000	21,000
BPT 2 nd Year	35,000	18,500
BPT 3 rd Year	30,000	16,000
BPT Final Year	13,750	---
BBMS 1 st Year	25,000	12,500
BBMS 2 nd Year	25,000	12,500
BBMS 3 rd Year	28,000	14,000
BHS 1 st Year	30,000	15,000
BHS 2 nd Year	30,000	15,000
BHS 3 rd Year	30,000	15,000

* All tuition and other fees are subject to revision by the Gulf Medical University's Board of Governors in accordance with university requirements. Every year, fees are reviewed and subject to revision. As and when fees are revised, the new fees will be applicable to all existing and new students. The amounts shown in this document represent fees as currently approved.

17.3 Hostel Fees

17.3.1 Women's Hostel (Ajman)

Single Room - Studio	AED 28,000 per year + AED 1000/- Security deposit
Single – 2 Bed Room	AED 24,000 per year + AED 1000/- Security deposit
Sharing – 1 Bed Room	AED 23,000 per year + AED 1000/- Security deposit
Sharing – 2 Bed Room	AED 19,000 per year + AED 1000/- Security deposit

17.3.2 Men's Hostel (Ajman)

Single Room - A	AED 25,000 per year + AED 1000/- Security deposit
Sharing – 1 Bed Room	AED 23,000 per year + AED 1000/- Security deposit
Sharing Room	AED 19,000 per year + AED 1000/- Security deposit

17.4 Utility Charges

Utility Charges	AED 1,100 (AED 100 per month for 11 months)
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17.5 Evaluation Fees

Program	Fees
MBBS	AED 2,000
DMD	AED 1,000
Pharm D	AED 1,000
BHS	AED 500

BBMS	AED 500
BPT	AED 500

17.6 Examination Fees

Program	Professional Examination	Re-sit Examination
MBBS Phase - I	AED 1,500	AED 1,500
MBBS Phase - II	AED 3,000*	AED 3,000*
MBBS Phase - III	AED 4,000*	AED 4,000*

*includes IFOM Examination fees

BPT	AED 150 per subject	AED 300 per subject
DMD	AED 750 per semester	AED 150 per course
Pharm D	AED 750 per semester	AED 150 per course
BBMS	AED 750 per semester	AED 150 per course
BHS	AED 750 per semester	AED 150 per course

17.7 Course Repeaters Fees

Program	Fees
DMD	AED 300 per credit
Pharm D	AED 300 per credit
BHS	AED 300 per credit
BBMS	AED 300 per credit

17.8 Examination Fees - Course Repeaters

Program	Fees
DMD	AED 150 per course
Pharm D	AED 150 per course
BHS	AED 150 per course
BBMS	AED 150 per course

17.9 Laboratory Fees

Program	Fees
BBMS - First Year	None
BBMS - Second Year	AED 500
BBMS - Third Year	AED 500
BBMS - Fourth Year	AED 500

17.10 Visa Charges

Types of Service	Fees
New Visa Fee – Normal Visa Stamping	AED 2,300
Visa Renewal Fee	AED 1,400
Visa Cancellation Fee – Student Outside UAE	AED 300
Visa Cancellation Fee – Student in UAE	AED 100

Urgent Visa Processing fee	AED 100
Emirates ID Fee	AED 170

17.11 Caution Deposit

Program	Fees
MBBS	AED 1,500 (Refundable)
DMD	AED 1,500 (Refundable)
Pharm D	AED 1,500 (Refundable)
BHS	AED 1,500 (Refundable)
BBMS	AED 1,500 (Refundable)
BPT	AED 1,500 (Refundable)

17.12 Graduation Fees

Program	Fees
Graduation Fees	AED 1,500

All graduates are required to make the payment of AED 1,500/- towards graduation fee to receive the degree in person at the convocation ceremony or in absentia from the Office of the Registers and Records, GMU.

17.13 Living Expense for International Students

Program	Fees
Living Expense for International Students	AED 5,500

17.14 Fees for other Services

Description	Fees
Graduation Fees	AED 1, 500
Third Party Liability (TPL) Insurance	AED 200 per year
Online Examination	AED 200 per year
Compensatory / Remedial Clinical Posting	AED 250 per session
Protective Antibody Panel Test	AED 800
Infection Screen Panel Test	AED 135
Application for Initial Registration	AED 150
Bonafide Letter (Certificate of true facts)	AED 100
Duplicate copy of Academic Transcript (Mark list)	AED 100
Replacement of lost hostel key / locker key	AED 100
Fee levied for damage to Locker	AED 100
Locker Annual Rent	AED 30
ID Card / Library Card	AED 25
Replacement of lost ID / Library Card	AED 25
Duplicate copy of hall ticket in place of original	AED 25

17.15 Transportation Fees

Destination	One Year	Six Months	One Month
Ajman	AED 3,850	AED 2,400	AED 450
Sharjah	AED 4,950	AED 3,000	AED 550
Dubai	AED 6,050	AED 3,600	AED 650

17.16 Payment of Fees

Fees must be paid in full before completing the enrollment process either in cash or by Demand Draft / Cheque payable to GMU due on the date of registration for new admissions. Students on GMU rolls must pay all fees before commencement of each semester. However, for those unable to pay the tuition fees in full upon registration, fees may be paid in two installments after approval from the management: the first half to be paid on the date of completing the registration and the second half by postdated cheque due four months after the first payment. Any further delay in payment will attract an additional penalty of a late payment fees. Hostel fees must be paid in full prior to occupying the hostel.

17.17 Late Fees and Fines

The name of student shall not be entered into the class register until all dues are paid. Late payment of fees shall invite a penalty of AED 75 per day up to the Add or Drop period for the credit bearing programs / 3 weeks for the non-credit bearing programs. The University shall not be responsible for the attendance deficits of students who fail to complete the payment on time. Any further delay in payment will attract an additional penalty of a late payment fees.

Please note that a penalty of AED 500 is imposed on returned cheques and the returned cheque will not be handed over to the student unless the penalty is paid in cash.

17.18 Financial Aid and Scholarships

Two or more children of the same family are entitled each to a 5% sibling subsidy in the fees, when they are registered for the same or different programs in GMU in the same academic year. Students are requested to apply in person with the supporting documents. GMU will assist in obtaining financial aid from charitable agencies or commercial banks for needy students. Further details in this regard may be obtained from the Office of the Accounts Department.

17.18.1 Care & Share - Sponsor a Medical or an Allied Health Professional Program

At GMU, it is believed that health is the harbinger of prosperity for the present and future generations. However, it is GMU's experience that many societies worldwide are underserved in terms of their health parameters owing to an acute shortage of a skilled health workforce. There are many meritorious students who wish to pursue education in the

health sector, but are not able to do so because of financial constraints. GMU proposes to make a small contribution in setting this imbalance right through its Care & Share – Sponsor a Medical or an Allied Health Professional Program. This program enables corporate bodies, philanthropists, NGOs health care providers and agencies to sponsor a student for an internationally recognized medical or other allied health education programs offered by GMU. Through a Care & Share Program, GMU would like to give an opportunity for the economically weak but academically bright students to enroll in any one of its academic programs.

17.19 Refund of Fees

In the event of a student formally withdrawing from the university, the following refund schedule will apply:

Withdrawal from the University	
One week before the first day of classes	100% refund
Before the end of the first week of classes	100% refund
During the second week of classes	50% refund
During the third week of classes	25% refund
During / After the fourth week of classes	0% refund

A Student withdrawing from the program after being admitted to GMU on having completed the registration process by paying the tuition fees will not be refunded the fees amount paid by the enrolled student under any circumstances during or after fourth week of the Academic Year. The above refunds are subject to a deduction of actual bank charges incurred to the university.

17.20 Revision of Tuition and other Fees

All tuition and other fees are subject to revision by Board of Governors in accordance with University requirements.

Every year, fees are reviewed and subject to revision. However the amount shall not exceed 15%. As and when fees are revised, the new fees will be applicable to all enrolled and new students. The amounts shown in this document represent fees as currently approved.

If a student discontinues the academic program for any reason and rejoins / gets re-admission in the program after one year or more shall be governed by the tuition and other fees as applicable at the time of his / her re-admission to the program.

18. ACADEMIC CREDIT

The academic credit provides a basis to measure the amount of engaged learning time expected of a typical student. One credit is defined as equivalent to 1 hour theory, 2 hours practical or 3 hours clinical per week for 15 weeks.

19. ACADEMIC TERMINOLOGY

Academic Calendar	Listing of all official dates and timelines for the academic year
Academic Year	Period of time from the first day of the first class of the first semester till the last day of the second semester.
Admission	Acceptance into an academic program as a student
Advisor	Faculty member assigned to assist the student
Alumni	Graduates of the Gulf Medical University, Ajman
AST	Anesthesia & Surgical Technology
Bachelor degree	The degree obtained at the end of an undergraduate degree program
BHS	Bachelor of Health Science
BPT	Bachelor in Physical Therapy
BBMS	Bachelor of Biomedical Sciences
Course	A study unit which may include lectures, seminars, clinics, laboratory work to facilitate learning.
Concentration	Concentrations are best thought of as a grouping of courses which represent a sub-specialization within in the major field of study.
CME	Continuing Medical Education
CRRI	Compulsory Resident Rotating Internship
Curriculum	The term refers both to the range of courses offered by an institution and to set of related courses constituting an area of specialization.

Credit hour	One credit hour is defined as equivalent to 1 hour theory or 2 hours practical / clinics per week for 15 weeks.
College	An academic unit of the university
Department	An academic unit of the college
Higher Diploma	A post-graduate qualification resulting from a program of study of a minimum of about 23 credits
Dip Tox	Diploma in Toxicology
Dismissal	Removal of a student from the college due to unacceptable conduct or unsatisfactory academic performance
DMD	Doctor of Dental Medicine
Electives	Courses which are not compulsory for students. Electives may be free-selected by the student from any course offerings, or restricted-chosen from a pre-determined list of options.
Extracurricular	Activities that are a part of the student life but not a part of curriculum of any academic program
Fees	Charges for a program, course or service
Full-time	Requiring more than 18 or more credit hours per semester
Graduate	A student who has completed his / her undergraduate program and is now pursuing a post-graduate program
Internship	A period of compulsory practical on-the job training
Major	The major is the field of study in which a student specializes at the baccalaureate level.
Minor	A minor is a separate field of study outside the major or concentration in which a student has a secondary area of specialization, requiring less course work than the major.
MBBS	Bachelor of Medicine & Bachelor of Surgery
MIS	Medical Imaging Sciences

MHRB	Masters in Human Reproductive Biology
MLS	Medical Laboratory Science
MS	Master of Science
MS CP	Master of Science in Clinical Pathology
MPH	Master in Public Health
MPT	Master of Physical Therapy
MTox	Master in Toxicology
NS	Nursing Science
Program	The set of courses and other formally established learning experiences which together lead to a qualification.
Part-time	A program of study involving at least 8 credits per semester
Pharm D	Doctor of Pharmacy
Pre-requisite	A course that has to be completed before another course can be taken
Probation	A warning regarding potential dismissal
Registration	Process of enrolling in a program or course
Required course	Courses necessary to be completed for completion of the academic program
Semester	A semester is a period of time, typically a minimum of 15 – 18 weeks
Track	A track is a narrow area within the major field, which the student may choose to follow, but which does not lead to a specialized award or degree and is not listed on the diploma or degree certificate.
Transcript	A copy of the students' academic record
Teaching Schedule	List of classes, timings and other details needed to take the course
Undergraduate	A student registered for a Bachelor's degree program
Withdrawal	Leaving the college officially without completing the program

20. GENERAL EDUCATION POLICY

The following goals of general education speak for the breadth, integration, and scaffolding of knowledge, skills, and attitudes that are embedded in the purpose statement of the institute. The goals of general education shall:

- Focus on the essential attitudes and behaviors that promote reflection and encourage life-long learning, wellness, and engagement with ideas, issues, and new experiences.
- Foster the development of critical thinking; the need to continually update their knowledge and translate the advances in medicine in the delivery of healthcare practice to the benefit of the health of the community; and a capacity for attaining individual perspective on one's own life through self-examination and the study of others.
- Engage students in activities that strengthen their ability to read, write, speak, listen, and think effectively using the English language as the primary medium of instruction and communication in their professional practice.
- Provide students with opportunities to examine and reflect upon moral and ethical problems and issues.
- Enable students to use technology in order to access and manipulate information competently.
- Enable students to understand and appreciate the ways social and cultural differences and similarities structure human experiences and knowledge in Islamic studies, history and culture and the social or behavioral sciences. As an important aspect of general education, students shall understand multicultural dimensions of the world in which we live, especially the experiences of people of Arabic descent.
- Emphasize study in breadth and encourage students to explore the ways scientific inquiry in the health sciences can provide solution to the issues of health and promote wellness in their own lives and to render service to the community that they will serve in the practice of their professions after graduation.

**BACHELOR OF MEDICINE &
BACHELOR OF SURGERY
[MBBS]**

21. BACHELOR OF MEDICINE & BACHELOR OF SURGERY (MBBS)

21.1 Overview

The MBBS program at College of Medicine is a modular, organ system-based integrated curriculum divided into three phases. The modular structure of the medical curriculum spans a total of 5 years followed by an internship of one year.

PHASE I, also called the Introductory Medical Sciences, constitutes the 1st Year MBBS. Seven courses integrated on the basis of themes constitute PHASE I. A qualifying examination will be conducted at the end of PHASE I, a prerequisite for the organ system- based modules in PHASE II.

PHASE II spans over 2nd and 3rd Year MBBS. The 10 courses are integrated on the basis of the organ systems in PHASE II. Problem Based Learning shall be a predominant teaching / learning strategy during this Phase. Clinical teaching is undertaken as ‘Professional Skills’ and ‘Work-based Learning’ courses which run parallel to the organ-system courses. The former entails learning skills relevant to each system in the respective organ-system courses in the safe environment of the Simulation Laboratory and the latter shall provide students with real-life doctor-patient encounters in the ambulatory care settings of Thumbay Clinics. Students are required to submit a Research Project as part of the curriculum. A qualifying examination will be held at the end of Phase II.

Phase III spans over the next two years of 4th and 5th Year MBBS and is called the ‘Clerkship Phase.” Students are rotated through major disciplines of Medicine, Surgery, Obstetrics and Gynecology, and Pediatrics and their subspecialties. A Multisystem Course dealing with themes and topics that cut across disciplines runs parallel to the clerkship rotations. The theoretical component of teaching in this phase will be related to the clinical rotations the students are posted. A qualifying examination will be held at the end of Phase III.

The successful students will be admitted to the internship program. The one-year Compulsory Resident Rotating Internship (CRRI) will provide the graduates on-the-job training under close supervision in the major areas of medicine and surgery. The graduates will be awarded the degree of MBBS on satisfactory completion of their internship.

The MBBS program was awarded Accreditation Eligible Classification status (Initial Recognition) in June 2004 by the Commission for Academic Accreditation, Ministry of Higher Education & Scientific Research, UAE and the degree is recognized by the Ministry of Health, UAE. College of Medicine is listed at <http://www.emro.who.int/hped> in the Eastern Mediterranean Regional Health Professions Education Directory of World Health Organization.

College of Medicine is listed as an accredited/recognized medical school in the International Medical Education Directory (IMED) published by Foundation of Advancement of International Medical Education and Research (FAIMER) at the website <http://imed.ecfmg.org>

21.2 Vision

The Vision of College of Medicine, GMU is to pursue excellence in health education, biomedical research and patient care. The College of Medicine aspires to:

- Attract the best of students and provide a unique learning experience incorporating the best practices in health education;
- Produce competent doctors who will make a significant contribution to the health of the community through pursuit of academia, research and healthcare;
- Be known for excellence in health professions education and research and its impact on the educational milieu of the nation and patient care.
- Be an integral part of the community with enhanced community engagement and provide quality education in health and biomedical sciences in collaboration with the country's healthcare planners.

21.3 Mission

The Mission of College of Medicine, GMU is to:

- Commit to prepare highly competent doctors to meet the evolving healthcare needs of the nation and the region;
- Strive to produce doctors who will be able to pursue postgraduate training in any of the various specialties, contribute to research and adopt an evidence-based approach to patient-care;
- Promote health services incorporating the latest advances in scientific knowledge in a manner that supports education and research for the benefit of the community.

21.4 Goals and Objectives

1. The student will acquire and understand scientific principles of medical knowledge at the molecular, cellular, organ, whole body and environmental levels of health and disease. He / she should be able to apply the current understanding and recent advances in contemporary basic sciences to promote health, prevent, diagnose and manage the common health problems of individuals (at different stages of life), families and communities.
2. The student will develop basic clinical skills (interpretive, manipulative, and procedural) such as the ability to obtain a patient's history, to undertake a comprehensive physical

and mental state examination, interpret the findings, and demonstrate competence in performance of a limited number of basic technical procedures.

3. The student will develop an attitude and practice personal and professional values necessary for the achievement of high standards of medical practice. This should enable him / her to carry out independently the responsibilities of a physician and to develop further knowledge and skills in order to adapt to the changes in the practice of medicine throughout his / her professional career.

21.5 Program Learning Outcomes (Aligned at Level 7 of QF Emirates)

QF Emirates Strands	Upon successful completion of the program, the graduate will be able to:
Knowledge	<p>A1: Demonstrate knowledge, understanding and integration of the key concepts and principles of biomedical, clinical, psychosocial sciences and allied fields;</p> <p>A2: Apply this specialized knowledge within the legal and regulatory framework in the clinical context to promote health, prevent and treat diseases commonly encountered in the region;</p> <p>A3: Analyze critically new knowledge obtained through research and integrate with current concepts of medical and allied health practice for enhancing clinical reasoning and problem-solving abilities.</p>
Skill	<p>B1: Select and perform appropriate procedural and clinical skills for a variety of clinical problems</p> <p>B2: Apply appropriate statistical tools and research methodology to critique research papers, undertake basic research studies and practice evidence-based medicine;</p> <p>B3: Communicate effectively with patients and their families; peers, mentors, healthcare teams as well as members of the community using written, verbal, non-verbal and electronic media in healthcare delivery and health information management.</p>
Autonomy and Responsibility	<p>C1a: Manage a variety of clinical problems encountered in the community using innovative and evidentiary approach;</p> <p>C1b: Arrive at decisions, take actions and perform assigned duties independently and as a team leader during patient care with an awareness of both one's own limitations and the need to seek the help of an expert when required in the interests of patient safety;</p> <p>C1c: Accept responsibility for patient care with due consideration to honesty, fairness, compassion, respect and integrity in all interactions with patients, peers and mentors, be worthy of trust and be sensitive to social-cultural norms, cultural diversity and patient confidentiality during discharge of duties.</p>

Role in Context	<p>C2a: Provide optimum patient-centered care at the level of a general practitioner through clerking, diagnosing and managing patients including providing common emergency and life-saving procedures, adhering to recommended guidelines and standard precautions with due regards to patient safety;</p> <p>C2b: Function as an effective leader and team member of the inter-professional and multidisciplinary teams and ensure achievement of group and individual outcomes;</p> <p>C2c: Contribute to the professional development of peers, and appreciate the roles and contributions of colleagues and other healthcare professionals.</p>
Self-Development	<p>C3a: Possess qualities of self-evaluation, reflection, self-learning and time-management skills so that life-long learning could be undertaken for personal and professional development, for continuous quality improvement and to enable further training in any specialty of their choice;</p> <p>C3b: Observe ethical standards during patient care and discharge of assigned duties.</p>

21.6 Matrix of Program Learning Outcomes (PLO) aligned with QF Emirates

National Standards of Learning Outcomes for Bachelor Level Program (UAENQF Level 7)	Learning Outcomes													
I. Knowledge														
	A1	A2	A3	B1	B2	B3	C1a	C1b	C1c	C2a	C2b	C2c	C3a	C3b
Specialized factual and theoretical knowledge and an understanding of the boundaries in a discipline, encompassing a broad and coherent body of knowledge and concepts, with substantive depth in the underlying principles and theoretical concepts.	√													
It also covers an understanding of allied knowledge and theories in related fields of work or disciplines and in the case of professional disciplines including related regulations, standards, codes, conventions as well as an understanding of critical approach to the creation and compilation of a systematic and coherent body of knowledge and concepts gained from a range of sources.		√												

Encompassed is a comprehensive understanding of critical analysis, research systems and methods and evaluative problem-solving techniques and familiarity with sources of current and new research and knowledge with integration of concepts from outside fields.			√												
II. Skills															
Technical, creative and analytical skills to:															
Solve specialized problems using evidentiary and procedural based processes in predictable and new contexts that include devising and sustaining arguments associated with a discipline			√												
Evaluate, select and apply appropriate methods, procedures or techniques in processes of investigation towards identified solutions;			√												
Evaluate and implement appropriate research tools and strategies, and				√											
Present, explain and/or critique complex and unpredictable matters using highly developed advanced communication and information technology skills.					√										
III. Aspects of Competence:															
III a. Autonomy and Responsibility															
Can take responsibility with conditional autonomy for:															
Developing innovative and advanced approaches to evaluating complex and unpredictable procedures and processes, resources or learning						√									
Analysing the management of technical, supervisory or design processes in unpredictable, unfamiliar and varying contexts							√								
working creatively and/or effectively as an individual, in a team leadership role, in managing contexts related							√								

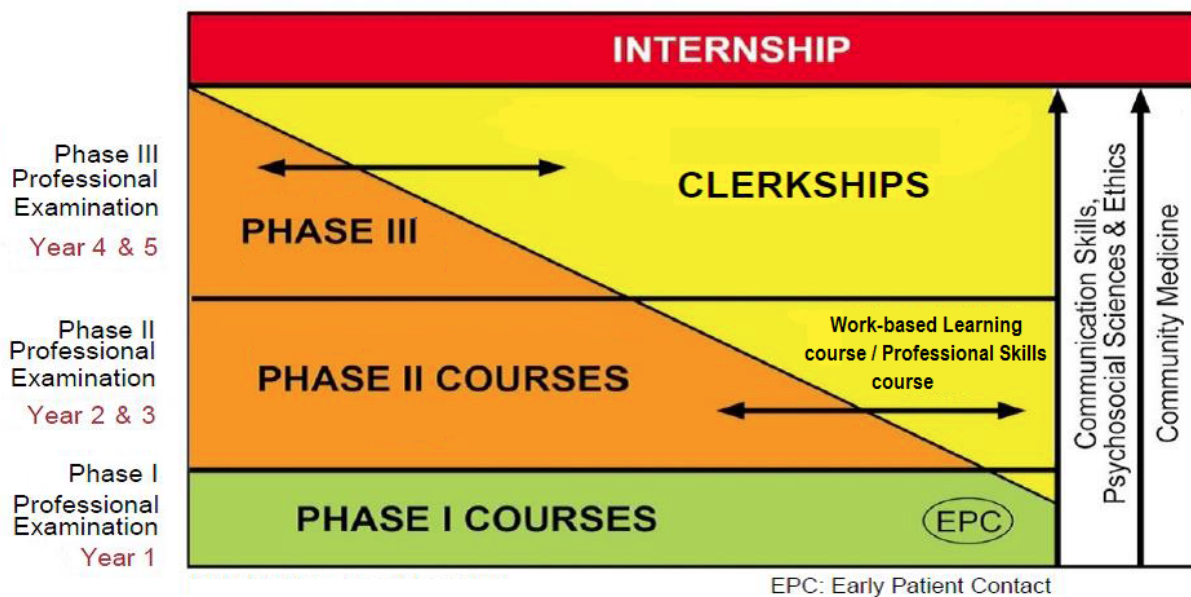
to technical or professional activities, and														
Expressing an internalised, personal view, and accepting responsibility to society at large and to socio-cultural norms and relationships.									√					
III b. Role in Context														
Can function within the specialisation of the discipline with autonomy in technical contexts and adopt para-professional roles with little guidance and take responsibility for:										√				
Setting and assessing the achievement of group or individual outcomes											√			
Management and supervision of the outcomes of the work of others or self, and											√			
Participating in peer relationships with qualified practitioners and multiple, complex groups and identify responsibility for managing the professional development and mentoring of individuals and groups.												√		
III c. Self-Development														
Can self-evaluate and take responsibility for:														
Contributing to professional practice and development and/or further learning and manage learning tasks independently and professionally, in complex and sometimes unfamiliar learning contexts, or													√	
contributing to observing ethical standards														√

21.7 Program Learning Outcomes aligned with each course

Course Code	Course Title														
		A1	A2	A3	B1	B2	B3	C1a	C1b	C1c	C2a	C2b	C2c	C3a	C3b
MED 101	Language and Communication Skills						F			P	P	P	P	P	P
MED 102	Psychosocial Sciences	P					P			P		F	F	F	P
MED 103	Cells, Molecules and Genes	F	P	P	P		P			P		P	P	P	P
MED 104	Tissues and Organs	F	P	P	P		P			P		P	P	P	P
MED 105	Embryogenesis and Life Cycle	F	P	P	P		P			P		P	P	P	P
MED 106	Metabolism and Nutrition	F	P	P	P		P			P		P	P	P	P
MED 107	Internal and External Environment	F	P	P	P		P			P		P	P	P	P
MED 201	Integumentary System	F	P	F	F		F	P		P		P	P	P	P
MED 202	Blood and Immune System	F	P	F	F		F	P		P		P	P	P	P
MED 203	Cardiovascular System	F	P	F	F		F	P		P		P	P	P	P
MED 204	Respiratory System	F	P	F	F		F	P		P		P	P	P	P
MED 205	Alimentary System	F	P	F	F		F	P		P		P	P	P	P
MED 206	Urinary System	F	P	F	F		F	P		P		P	P	P	P
MED 207	Reproductive System	F	P	F	F		F	P		P		P	P	P	P
MED 208	Nervous System	F	P	F	F		F	P		P		P	P	P	P
MED 209	Musculoskeletal System	F	P	F	F		F	P		P		P	P	P	P
MED 210	Endocrine System and Mammary Glands	F	P	F	F		F	P		P		P	P	P	P
MED 211	Clinical Skills Competency Levels I and II	P			F		F			P		P	P	F	P

MED 212	Research Methodology & Project			F		F	P	P		P		P	P	P	F
MED 301	Ophthalmology	F	F	F	F	P	F	F	F	F	F	F	P	F	F
MED 302	Otorhinolaryngology	F	F	F	F	P	F	F	F	F	F	F	P	F	F
MED 303	Internal Medicine and Allied Disciplines	F	F	F	F	P	F	F	F	F	F	F	P	F	F
MED 304	General Surgery and Allied Disciplines	F	F	F	F	P	F	F	F	F	F	F	P	F	F
MED 305	Obstetrics and Gynecology	F	F	F	F	P	F	F	F	F	F	F	P	F	F
MED 306	Pediatrics	F	F	F	F	P	F	F	F	F	F	F	P	F	F
MED 307	Multi-system Course	F	F	F			P			P		P	P	P	
MED 401	Ophthalmology	F	F	F	F	P	F	F	F	F	F	F	P	F	F
MED 402	Otorhinolaryngology	F	F	F	F	P	F	F	F	F	F	F	P	F	F
MED 403	Internal Medicine and Allied Disciplines	F	F	F	F	P	F	F	F	F	F	F	P	F	F
MED 404	General Surgery and Allied Disciplines	F	F	F	F	P	F	F	F	F	F	F	P	F	F
MED 405	Obstetrics and Gynecology	F	F	F	F	P	F	F	F	F	F	F	P	F	F
MED 406	Pediatrics	F	F	F	F	P	F	F	F	F	F	F	P	F	F
MED 595	Internship	F	F	F	F	F	F	F	F	F	F	F	F	F	F

21.8 Program Structure



Modular Organ System-based MBBS Curriculum

Phase - I			Phase - II			Phase - III		
Language and Communication Skills	Integumentary System	PROFESSIONAL SKILLS COURSE	Endocrine System and Mammary Glands	PROFESSIONAL SKILLS COURSE	MULTI SYSTEM COURSE	Ophthalmology	Ophthalmology	INTERNSHIP
Psychosocial Sciences	Blood and Immune System		Reproductive System			Otorhino-laryngology	Otorhino-laryngology	
Cells, Molecules and Genes	Cardiovascular System		Nervous System			Internal Medicine	Medicine and Subspecialties	
Tissues and Organs	Respiratory System		Musculoskeletal System			General Surgery	Surgery and Subspecialties	
Embryogenesis and Life Cycle	Alimentary System		Work-based Learning			Obstetrics and Gynecology	Obstetrics and Gynecology	
Metabolism and Nutrition	Urinary System		Research Methodology & Project			Pediatrics	Pediatrics	
Internal and External Environment	Work-based Learning							
	Research Methodology & Project							
Year 1	Year 2		Year 3			Year 4	Year 5	Year 6

21.9 Course Descriptions

I MBBS (Phase I)

MED 101: Language and Communication Skills

The overall aim of the course is to enable the student to become oriented to the communication tasks of a physician by developing an appreciation of the interpersonal nature of medical encounters in different clinical situations, develop basic communication skills and learn communication strategies. The course is designed to provide a variety of patient encounter settings to understand the basic interpersonal communication processes, gain sensitivity to patient perspectives and to develop a sense of personal awareness which will help the student to deal with patients of all ages and both genders in routine and challenging situations and in the process work effectively as a member of the health care team. Students will be encouraged to learn medical terminology in common usage to reduce the language barriers in an effort to improve their communication skills. Role plays and small group sessions would be the predominant pedagogical strategy adopted in this course to meet the outcomes. This course along with the Psychosocial Sciences course runs parallel to all other courses across the two semesters. This course provides a strong foundation for future courses with the principles learnt here are expected to be applied during the clinical skill sessions in the organ system courses in years 2 and 3 and during clerkships in year 4 and 5. This course strongly contributes to the Program Learning Outcomes related to Communication and Clinical Skills, Leadership and Teamwork, Professionalism and Values, and Personal Development.

MED 102: Psychosocial Sciences

This course covers two major themes. *Introduction to Behavioral Sciences* covers topics as psychosocial basis of health approaches to study human behavior, methods of behavioral sciences research, organic basis of behavior and the process of human development through the life span. *Dynamics of Human Behavior* helps students to gain knowledge of the working of the human memory system, consciousness and human behavior, and the principles of learning and reinforcement and its application. It also provides students an opportunity to learn the elements of culture and process of socialization, and their impact on health and illness. This course along with the Language and Communication Skills course runs parallel to all other courses across the two semesters. This course provides a strong foundation for future courses with the principles learnt here are expected to be applied during the clinical skill sessions in the organ system courses in years 2 and 3 and during clerkships in year 4 and 5.

MED 103: Cells, Molecules and Genes

This course is designed to provide learning opportunities to the first year medical students to understand the fundamentals of molecular, cellular and genetic processes, structure-function

relationships of biomolecules and bio membranes with an emphasis on their clinical relevance. The basic mechanisms of signal transduction learned in this course will help in understanding the mechanisms of hormone actions. An insight into the genetic basis of disorders forms a strong foundation in understanding the diagnosis and management plan and importance of genetic counseling. Laboratory sessions help in identifying biomolecules by chemical methods; cells, epithelia and stages of cell cycle using microscopy and pedigree analysis using charts. Case based learning is introduced to help the students in understanding the basic concepts and integration of scientific facts. The course lays a strong foundation in understanding the basics of nutrition and metabolism and the molecular mechanisms involved in different organ-system disorders covered during the organ-system courses in years 2 and 3 and during clerkships in year 4 and 5.

MED 104: Tissues and Organs

In this course, the structure and function of the various types of tissues, their organization to form organs of the different systems in the body are dealt with in an integrated manner to help understand the correlation of structure with function. This will enable the student to better correlate the alterations in function due to structural changes in a disease. Seminars in relevant areas will give the student an opportunity to develop presentation skills. The knowledge of basic tissues and their organization will help the student to build upon the knowledge in organ-system based courses in years 2 and 3.

MED 105: Embryogenesis and Life Cycle

This course is designed to introduce the fundamentals of human embryogenesis to students and describe the sequence of events in developmental processes that take place in the normal embryo. The understanding of normal development will provide the basis for understanding how certain development processes go awry leading to congenital disorders. The study of child and lifespan development prepares the student to understand the physical, social, emotional and intellectual growth and development during the different phases of the life cycle. The course lays the foundation for the understanding of the development of different organ-systems in years 2 and 3.

MED 106: Metabolism and Nutrition

This course aims to provide first year medical students with knowledge and understanding of the principles and concepts underlying nutrition and metabolism. Concepts learnt in the 'Cells, Molecules and Genes', 'Tissues and Organs' and the 'Embryogenesis and Lifecycle' courses provide the necessary foundation for this course. Role of nutrition at different stages of the normal lifecycle, nutritional disorders of public health importance, major metabolic pathways and their roles in normal and disease states are integrated into this course in the form of lectures, case-based learning sessions, computer-aided learning and seminars. Knowledge and competencies gained in this course will form the basis for understanding the

diagnosis and management of diseases taken in the organ-system courses in years 2 and 3 and during clerkships in year 4 and 5. The student will, in addition, develop an appreciation of the importance of a healthy diet, the close association of nutrition with disease states as well as the role of nutritionists in the healthcare team.

MED 107: Internal and External Environment

This course will provide learning opportunities to gain insight into the interaction between the human body and the internal and external environment. It will cover broad areas like the chemical, physical and biological agents in the environment to which the human body is constantly exposed; the response of the body to exposure to these agents in the form of physiological adaptations and pathological diseases; and the attempts to measure the magnitude of these problems in terms of risk factors, morbidity and mortality rates. Opportunities will be provided to identify and interpret changes in tissues and organs as a result of exposure to common noxious environmental agents. The student will also be introduced to methods used to gather and analyze health information in an attempt to identify unhealthy behaviors which increases risk of developing environmental diseases with special emphasis on the necessity of exhibiting sensitivity to health beliefs of the individual and the community and the importance of working cooperatively as a member of a team in the process. The course lays a strong foundation in understanding the basics of pathophysiology and prevention of organ-system disorders which are covered in detail during the organ-system courses in years 2 and 3 and during clerkships in year 4 and 5.

II & III MBBS (Phase II)

MED 201: Integumentary System

This course is integrated around the integumentary system to provide the student with a sound knowledge and understanding of the embryogenesis, structure and functions of the integumentary system in health and its major deviations in common disease conditions. Particular emphasis is placed on the causes, pathogenesis, and pathophysiologic basis of characteristic clinical manifestations, methods of diagnosis, principles governing management and methods of prevention of these disorders. The course employs a variety of teaching-learning methods to facilitate interdisciplinary integration, student-centered learning and development of generic competencies. The course builds on the concepts learnt in year 1 and lays the foundation for clerkships in years 4 and 5.

MED 202: Blood and Immune System

This course has been integrated around the hematopoietic and immune systems with relevant concepts, principles and skills from anatomy, physiology, biochemistry, pathology, pharmacology, microbiology, community medicine, forensic medicine and general medicine. The course includes the study of development, normal structure and functions of the hematopoietic and immune systems and their common disorders. Emphasis is placed upon

the etio-pathogenesis of the altered structure and function, epidemiology, clinical features, principles of diagnosis and management of these disorders. In addition, this course includes hemostasis and its related disorders, thrombosis and the principles of blood component therapy. Problem Based Learning (PBL) deals with prototype diseases and provides opportunities to develop problem solving, self-directed learning and communication skills. The course builds on the concepts learnt in year 1 and lays the foundation for clerkships especially in Medicine and Subspecialties, and Pediatrics in years 4 and 5.

MED 203: Cardiovascular System

The course has been structured as an integrated study of the human cardiovascular system with relevant concepts, principles and skills from anatomy, physiology, biochemistry, pathology, pharmacology, microbiology, community medicine, forensic medicine and general medicine with emphasis on the mechanisms of operation of the human cardiovascular system. Relevant principles are integrated to the behavior of the normal circulation and its responses to the stress of injury and disease. This course deals with common cardiovascular disorders including atherosclerosis, coronary heart disease and myocardial infarction, hypertension, valvular and congenital heart disease, infectious heart disease and heart muscle disorders. A series of case presentations dealing with common complications of a variety of cardiac diseases like cardiac arrhythmias, heart failure and shock are also included. Problem Based Learning (PBL) deals with prototype diseases and provides opportunities to develop problem solving, self-directed learning and communication skills. The course builds on the concepts learnt in year 1 and lays the foundation for clerkships in Medicine and Subspecialties, and Pediatrics in years 4 and 5.

MED 204: Respiratory System

The course is designed to provide an integrated approach to the learning of the normal structure, function and development of human respiratory system using different strategies and applying the knowledge and skills acquired in understanding the pathophysiology of various respiratory disorders. The basic principles of management of these disorders with a focus on disease prevention will be described. The medico-legal aspects of specific respiratory disorders will be studied. A series of prototypical case presentations of common respiratory tract disorders is also included. Problem-based learning (PBL) deals with prototype diseases and provides opportunities to develop problem-solving and communication skills. The course builds on the concepts learnt in year 1 and lays the foundation for clerkships in years 4 and 5.

MED 205: Alimentary System

The course adopts an integrated approach to provide the student with a sound knowledge and understanding of the embryogenesis, structure and functions of the digestive system and its accessory organs in health and their major deviations in disease. The student is

introduced to the etio-pathogenesis, pathophysiological basis of clinical manifestations, methods of diagnosis, principles governing the pharmacological management and methods of prevention of common disorders of the digestive system. The course will schedule Problem-based Learning (PBL) session and use a variety of teaching / learning methods to facilitate interdisciplinary integration, student-centered learning and development of generic competencies. Simultaneous introduction of clinical skills course aims to equip the student with basic clinical and communication skills in preparation for the clerkship and to vertically integrate learning. The course builds on the concepts learnt in year 1 and lays the foundation for clerkships in years 4 and 5.

MED 206: Urinary System

This course is integrated around the urinary system with relevant concepts, principles and skills from anatomy, physiology, biochemistry, pathology, pharmacology, microbiology, internal medicine, radiology and surgery. Emphasis is placed on the role of kidney in homeostasis and how it is altered in common disorders including renal failure, glomerular diseases, infections, obstruction and neoplasms. A series of prototypical case presentations of common urinary tract disorders is also included. Problem-based learning (PBL) provides opportunities to develop problem-solving and communication skills. The course builds on the concepts learnt in year 1 and lays the foundation for clerkships in years 4 and 5.

MED 207: Reproductive System

The course is designed to provide an integrated approach to the learning of normal structure, function and development of the human reproductive system and the deviations in common disorders using different teaching / learning strategies. The basic principles of management of these disorders are described with a focus on disease prevention. The medico-legal aspects of specific disorders are also addressed in the course. Building on the concepts learnt in year 1, this course lays the foundation for clerkship in Obstetrics and Gynecology in years 4 and 5.

MED 208: Nervous System

This course builds on the basic concepts of normal structure and function of the nervous system acquired in MED 104 (Tissues and Organs) during year 1. The course is designed to provide an integrated approach to the learning of the development, structure - function relationships of the human nervous system, and aspects of behavioral sciences using different strategies and applying the knowledge and skills acquired in understanding the pathophysiology of common disorders of these systems. The general approach to diagnosis and basic principles of management of these disorders with a focus on disease prevention is described. The medico-legal aspects of specific disorders are addressed. A series of prototypical case presentations of common diseases to promote contextual learning of basic sciences is also included. Problem-based learning (PBL) provides opportunities to develop

problem solving, self-directed learning and communication skills. The course equips students with the foundational biomedical knowledge and basic clinical skills required for the clerkships in Medicine and Subspecialties in years 4 and 5.

MED 209: Musculoskeletal System

This course introduces the student to the musculoskeletal system with integration of relevant concepts, principles and skills from anatomy, physiology, pathology, pharmacology, microbiology, community medicine, forensic medicine, orthopedics and physical therapy. Particular emphasis is placed on integration of functional anatomy and its responses to the stress of injury and disease that affect the normal kinetics of posture and movements including the impact on aging and degeneration respectively in health and disease. The common musculoskeletal disorders such as traumatic, infectious, metabolic, degenerative, congenital and neoplastic conditions are included in this course. The course employs a variety of teaching / learning methods like lectures, small group sessions such as Problem-based Learning (PBL), laboratory sessions combined with computer-assisted learning and seminars. The course builds on concepts and principles learnt in year 1, and lay the foundation for clerkships in years 4 and 5.

MED 210: Endocrine System and Mammary Glands

This course provides an integrated approach to the learning of normal structure, function and development of endocrine system including the mammary glands using different strategies and applying the knowledge and skills acquired in understanding the pathophysiology of their common disorders. Each endocrine organ is taken as a theme and common presentations due to its hypo-function and hyper-function are studied. The clinical and laboratory features of the disorders are discussed. Problem-based learning deals with a prototype disease and provides opportunities to develop abilities of problem-solving, self-directed learning and communication skills. The course builds on the concepts learnt in year 1, and lays the foundation for clerkships in years 4 and 5.

MED 211: Work-based Learning

The course is offered as a half-day clinical posting per week in the ambulatory care settings at Thumbay Clinics. Building upon the Language and Communication Skills and Psychosocial Sciences courses in year 1, the Work-based Learning course provides opportunities for students to apply and perform the skills like history taking and physical examination learnt in the simulated setting during the Professional Skills course in each organ-system course, on real patients under supervision and observe the clinicians interact with the patients in the ambulatory care setting. All students will undergo structured certificate courses in Basic Surgical Skills, Basic Orthopedic Skills and Universal Standard Precautions at the Center for Advanced Simulation in Healthcare (CASH) as part of this course. They shall also train in the American Heart Association accredited Basic Life Support (BLS) Provider course, and upon

successful completion will receive a BLS Provider card valid for 2 years. These certificate courses are a mandatory requirement for commencing the clerkships in year 4.

MED 212: Research Methodology and Project

This course is designed to provide the student the opportunity to develop a research proposal under faculty guidance. The proposal development shall involve a literature search, preliminary experimentation, or a pilot field study. The research would be preliminary but relevant to the project. The course will be conducted in three parts. In the second year, Research Methodology is designed to introduce the student to basic concepts and problems encountered in scientific investigation, including types of data and measurement, descriptive statistics, inferential statistics, validity, reliability, sampling, hypotheses and hypothesis testing, literature review and research design. In Year 3, Research Protocol Design introduces the student to the scientific development of research protocols and their key elements. Topics include the differentiation between research design types, rules for writing protocols, ethical considerations relative to research protocols and the correct preparation of data collection forms. Upon completion, the student will be able to identify the primary components of protocols and effectively develop a protocol draft. He / she will further be given an opportunity to undertake a Research Project to gain practical experience in the design and / or implementation of research. A student may choose to do it as part of an ongoing faculty research project or as an independent experience in a community or institutional setting. Selection of the research topic will depend on individual needs of a student and must be approved by the student's Academic Advisory Committee. A faculty member shall supervise the research project.

MED 213: Professional Skills Course

This course is seamlessly integrated into the organ system courses of Phase II. It is introduced progressively and reinforced as appropriate in each course in the pre-clerkship years in an attempt to vertically integrate the knowledge of the basic sciences with the practice of the clinical sciences. This course builds on the communication skills learnt in year 1. The student learns to take a more focused history and perform a physical examination as relevant to the different organ-systems in this course during the years 2 and 3. In addition, the students will be introduced to the performance of routine technical procedures related to physical examination to elicit specific diagnostic physical signs. Procedural and manipulative skills relevant to the organ-system under study will be learnt in the safe environment of the Simulation Lab. Interpretation of results of ECG, laboratory and radiologic investigations and deviations from the normal will be identified and their significance will be discussed by a team made up of both clinicians and basic scientists. These skills will help to develop adequate communication and clinical skills in order to prepare the student to integrate rapidly into the hospital and respond professionally and competently during real doctor-patient encounters during the clerkships in years 4 and 5 and the final internship year.

IV MBBS (Phase III)

MED 301: Ophthalmology

This clerkship in Ophthalmology is built upon the knowledge and clinical skills learnt during the organ-system courses in years 2 and 3 and is designed for the medical student to acquire additional knowledge and competencies to provide appropriate level of primary eye care for diseases commonly encountered in the community and to learn the indications for referral of cases to ophthalmologists for further management. During this clerkship, the student takes an ophthalmic history and performs a basic eye examination with torchlight and ophthalmoscope in order to detect common abnormalities of the eye and visual system. Students will learn to communicate effectively, interpret clinical findings, arrive at a diagnosis, discuss the management plan and relate ocular involvement in multi-system diseases in the ambulatory care setting and at the bedside. The students will observe ophthalmic investigative procedures and surgeries performed by experts. The clerkship also helps the student to gain an understanding of the ethical concepts applied in the practice of medicine and insight into the responsibilities of healthcare professionals and patients' rights. This clerkship lays the foundation for the clerkship in Ophthalmology in Year 5.

MED 302: Otorhinolaryngology

This clerkship in Otorhinolaryngology is built upon the knowledge and clinical skills learnt during the organ-system courses in years 2 and 3 and is designed for the medical student to acquire additional knowledge and competencies to provide appropriate level of primary care under supervision for diseases of the ear, nose and throat commonly encountered in the community. During this clerkship, the student takes a relevant history and performs a basic head and neck examination with equipment (flashlight, tongue blade, tympanometry and otoscope) available to a primary care practitioner. The students will discuss the clinical findings, diagnose common problems like allergic rhinitis, sinusitis, otitis media, epistaxis, facial fractures, hearing loss, dizziness, and swallowing disorders and design a treatment plan with the faculty member. Students will observe surgical procedures like ear syringing, nasal packing, tracheostomy, endoscopy and removal of foreign bodies performed by experts in the field. The student will perform laryngoscopy and tracheostomy on a manikin in the simulation lab. The clerkship also helps the student to gain an understanding of the ethical concepts applied in the practice of medicine and insight into the responsibilities of healthcare professionals and patients' rights. This clerkship lays the foundation for the clerkship in Otorhinolaryngology in Year 5.

MED 303: Internal Medicine

This clerkship in General Medicine is built upon the knowledge gained and clinical skills learnt during the organ-system courses in years 2 and 3 and will provide the students with opportunities to have adequate clinical encounters in both ambulatory and bedside settings.

During this clerkship, the student will learn to take a relevant history, and perform general and focused systemic examination and observe management of common acute and chronic medical disorders. A posting in Primary Healthcare Clinic also provides an insight into the delivery of primary healthcare in the country. The clerkship also helps the student to gain an understanding of the ethical concepts applied in the practice of medicine and insight into the responsibilities of healthcare professionals and patients' rights. This clerkship lays the foundation for the clerkship in Medicine and Subspecialties in Year 5.

MED 304: General Surgery

This clerkship in General Surgery is built upon the knowledge gained and clinical skills learnt during the organ-system courses in years 2 and 3 and will provide the students with opportunities to have adequate clinical encounters in both ambulatory and bedside settings. The clerkship in Surgery is designed to give the student a broad exposure to the principles of diagnosis and management of common surgical problems, including surgical emergencies. During the course of the rotation, the student will be expected to focus on basic principles of peri-operative, operative and postoperative management of the patient with a surgical problem. The surgical experience includes rotations in orthopedics, anesthesia, radiology, and emergency room. The clerkship also helps students to gain an understanding of the ethical concepts applied in the practice of medicine and insight into the responsibilities of healthcare professionals and patients' rights. This clerkship lays the foundation for the clerkship in Surgery and Subspecialties in Year 5.

MED 305: Obstetrics and Gynecology

This clerkship in Obstetrics and Gynecology is built upon the knowledge gained and clinical skills learnt during the organ-system courses in years 2 and 3 and will provide the students with opportunities to have adequate clinical encounters in both ambulatory and bedside settings under close supervision of the faculty member. The student will gain experience in history taking and physical examination to reach a diagnosis and discuss the management of common gynecologic and obstetric conditions with the faculty member while dealing with patients in the outpatient settings, delivery room, operation room and wards. The performance of procedural skills like delivering a baby, taking a PAP smear, suturing an episiotomy wound will be learnt and practiced in the safe environment of the Simulation Lab. The clerkship also helps the student to gain an understanding of the ethical concepts applied in the practice of medicine and insight into the responsibilities of healthcare professionals and patients' rights. This clerkship lays the foundation for the clerkship in Obstetrics and Gynecology in Year 5.

MED 306: Pediatrics

This clerkship in Pediatrics is built upon the knowledge and clinical skills learnt during the organ-system courses in years 2 and 3 and will provide the students with opportunities to

have adequate clinical encounters in both ambulatory and bedside settings under close supervision of the faculty member. The student will learn to obtain clinical history in an age-appropriate and sensitive manner from a child and or the accompanying adult and conduct a pediatric physical examination appropriate to the condition. During presentation of the clinical findings to the faculty member, the student will interpret the clinical findings and available lab results to suggest a diagnosis and discuss the management of the disease. The student will assess growth and development and advocate safety measures to prevent injury and disease in children. The clerkship also helps the student to gain an understanding of the ethical concepts applied in the practice of medicine and insight into the responsibilities of healthcare professionals and patients' rights. This clerkship lays the foundation for the clerkship in Pediatrics in Year 5.

MED 307: Multisystem Course

This course will deal with themes and topics that cut across all disciplines involving multiple organ-systems in a broader perspective. This will enable the student to see the patient as whole and appreciate the generalized nature of diseases. Common examples are HIV & AIDS, tuberculosis, hypertension, diabetes mellitus, connective tissue disorders, septicemia, jaundice etc. In this course, Team-Based Learning (TBL) and / or Multidisciplinary Faculty Seminars shall be used as the main learning method. This course serves as a platform to integrate concepts across different courses in Year 4.

V MBBS (Phase III)

MED 401: Ophthalmology

This clerkship in Ophthalmology is built upon the knowledge and competencies gained in MED 301 Ophthalmology clerkship in year 4 and is designed for a medical student to acquire additional knowledge and competencies to provide appropriate levels of primary eye care under supervision for diseases commonly encountered in the community. The students gain additional clinical experience in ambulatory and inpatient ophthalmic care settings with additional exposure to ophthalmic subspecialties, investigative procedures and surgeries. The emphasis in this clerkship is integrated patient care, teamwork and preparing the student for internship and professional practice.

MED 402: Otorhinolaryngology

This clerkship in Otorhinolaryngology is built up on the knowledge and competencies gained in MED 302 Otorhinolaryngology clerkship in year 4 and is designed for a medical student to acquire additional knowledge and competencies to provide appropriate levels of primary care under supervision for diseases of the ear, nose and throat under supervision commonly encountered in the community. The students gain additional clinical experience in ambulatory and inpatient care settings with additional exposure to inpatients, investigative procedures and surgeries of the ear, nose and throat. The emphasis in this clerkship is

integrated patient care, teamwork and preparing the student for internship and professional practice.

MED 403: Medicine and Subspecialties

This clerkship in Medicine and Subspecialties is built upon the knowledge and competencies gained in MED 303 Internal Medicine clerkship in year 4 and is designed for a medical student to acquire additional knowledge and skills in this clerkship to provide appropriate levels of primary care under supervision for medical conditions commonly encountered in the community. The students are rotated in psychiatry and other medical sub-specialties like neurology, gastroenterology, rheumatology, pulmonology, endocrinology, gastroenterology and cardiology to gain an insight into the presentation and management of medical conditions in these specialties. They are exposed to advanced investigative modalities and procedures. The emphasis in this clerkship is integrated patient care, teamwork and preparing the student for internship and professional practice.

MED 404: Surgery and Subspecialties

This clerkship in Surgery and Subspecialties is built upon the knowledge and competencies gained in MED 304 General Surgery clerkship and is designed for a medical student to acquire additional knowledge and skills in this clerkship to provide appropriate levels of primary care under supervision for surgical diseases commonly encountered in the community. The clerkship in Surgery and Subspecialties is designed to give the student an additional exposure to the principles of diagnosis and management of common surgical problems, including surgical emergencies. The surgical experience is further widened to include rotations in surgical subspecialties of trauma and acute care, vascular surgery and urology. The emphasis in this clerkship is integrated patient care, teamwork and preparing the student for internship and professional practice.

MED 405: Obstetrics and Gynecology

This clerkship in Obstetrics and Gynecology is built upon the knowledge and competencies gained in the MED 305 Obstetrics and Gynecology clerkship in year 4 and is designed for a medical student to acquire additional knowledge and competency in the discipline to provide appropriate levels of primary care under supervision for Obstetrics and Gynecological conditions commonly encountered in the community. The student will gain competence in history taking, physical examination, diagnosis and management of Obstetrics and Gynecological conditions. The student will have opportunities to assist in normal labor and deliveries and gain confidence in performing other clinical procedures. The emphasis in this clerkship is integrated patient care, teamwork and preparing the student for internship and professional practice.

MED 406: Pediatrics

This clerkship in Pediatrics is built upon the knowledge and competencies gained in the MED 306 Pediatrics clerkship in year 4 and is designed for a medical student to acquire additional knowledge and competency in the discipline to provide appropriate levels of primary pediatric care under supervision for pediatric conditions commonly encountered in the community. The student will learn to obtain clinical history in an age-appropriate and sensitive manner from a child and or the accompanying adult and conduct a pediatric physical examination appropriate to the condition. During presentation of the clinical findings to the faculty member, the student will interpret the available laboratory results to suggest a diagnosis and discuss the management of the disease. The student will assess growth and development and advocate safety measures to prevent injury and disease in children. The emphasis in this clerkship is integrated patient care, teamwork and preparing the student for internship and professional practice.

MED 595: Internship

This consists of an on-the-job training for a period of one year wherein the students undergo rotations in different clinical departments on completion of the academic program. The student gains on the job experience under the close supervision of his / her supervisors. It also serves to provide opportunities to attain appropriate higher skill levels as the student has completed the didactic requirements of the course and is now given opportunities to further improve his / her skills and master it before he / she enters independent practice. The internship experience also gives an insight into the practice of the chosen profession and is in itself a strong motivating factor for the student to continue and pursue higher education and specialize further in the chosen field of study.

**BACHELOR OF
PHYSIOTHERAPY [BPT]**

22. BACHELOR OF PHYSIOTHERAPY (BPT)

22.1 Overview

Physiotherapy (also called Physical Therapy) is a health care profession concerned with prevention, treatment and management of movement disorders arising from conditions and diseases occurring throughout the life span.

Physiotherapists (PT's) are health care professionals who diagnose and treat individuals of all ages, from new-borns to the very oldest, who have medical problems or other health-related conditions that limit their abilities to move and perform functional activities in their daily lives. PT's utilize an individual's history and physical examination in diagnosis and treatment incorporating the results of laboratory and imaging studies.

The practice of physiotherapy (PT) is rapidly changing and the contemporary PT practitioners are expected to have a higher level of knowledge and skills needed to meet a new demand for autonomous practice in physical therapy, and to fulfill the professional desire for evidence-based practice.

The Bachelor of Physiotherapy (BPT) program learning outcomes are aligned to Level 7 of the NQF Emirates (National Qualifications Framework).

22.2 Vision

The Bachelor of Physiotherapy Program will be a recognized leader in evidence-based, clinically integrated, physical therapy education through collaboration among specialized professionals and institutions, serving diverse student and community populations and the physical therapy profession.

22.3 Mission

To advance the profession of Physiotherapy in the UAE and Middle East by graduating physical therapists who demonstrate highly competent, evidence-based practice and professional behaviors in a dynamic health care environment. The graduates will be able to serve the health care needs of society while contributing to the advancement of the profession.

22.4 Goals and Objectives

Goals

- a. The student should acquire knowledge and understanding of health, its promotion of disease, injury and disability. Its prevention and management in the context of the whole individual and his or her place in the family and in society.
- b. The student should acquire and become proficient in physiotherapy skills such as the ability to select strategies for cure and care: adopt restorative and rehabilitative measures for maximum possible independence of a patient at home, work place and in the community.

- c. The student should acquire and demonstrate attitudes necessary for the achievement of high standards of physiotherapy practice both in relation to the provision of care of individuals and populations and to his or her own personal development.

Objectives

The Bachelor of Physiotherapy Program curriculum prepares professionals dedicated to maximizing physical potential for the advancement of human performance. The objective of the educational program is to produce physical therapists who can respond to complex patient/client needs quickly, scientifically and independently following graduation and licensure.

Knowledge objectives

On successful completion of the Physiotherapy program, the student will have acquired and demonstrated a knowledge and understanding of:

- a. Sciences basic to physiotherapy.
- b. Normal structure and function of the body and of each of its major organ systems.
- c. Pathology and patho physiology of organ systems.
- d. Diseases in terms of processes, both mental and physical such as trauma, inflammation, immune response, degeneration, neoplasia, metabolic disturbance and genetic disorders.
- e. Rational and basic investigation approach to the medical system and surgical intervention regimens.
- f. How disease presents in patients of all ages; how patients react to illness or to the belief that they are ill; and how illness behavior varies between social and cultural groups.
- g. The environmental and social factors causing diseases, dysfunctions and the analysis of the burden of functional impairments within the community.
- h. The principles of physiotherapy, including:
 - The management of clinical and functional problems.
 - The care of disabled.
 - The rehabilitation, institutional and community care.
 - The amelioration of suffering and the relief of pain.
 - The care of the dying.
 - Human relationships, individual and community.
 - The importance of communication both with patients and their relatives and with other professionals.
 - The importance of promoting health in general as well as competitive level, in areas such as sports, work productivity and geriatrics.
 - Ethical and legal issues relevant to the practice of physiotherapy.

Skill Objectives

Screening and Examination

1. Examine patients/clients by obtaining a history from them and from other sources.

2. Examine patients/clients by performing systems reviews.
3. Examine patients/clients by selecting and administering culturally appropriate and age-related tests and measures.

Evaluation, Diagnosis and Prognosis

1. Evaluate data from the examination (history, systems review, and tests and measures) to make clinical judgments regarding patients/clients.
2. Determine a diagnosis that guides future patient/client management.
3. Determine patient/client prognoses.

Plan of Care

1. Collaborate with patient / client, family members, payers, other professionals, and other individuals to determine a plan of care that is acceptable, realistic, culturally competent, and patient / client - centered.
2. Establish a Physiotherapy plan of care that is safe, effective, patient/client-centered and includes consideration of the physical, psychosocial, vocational, and economic needs of the patient / client.
3. Determine patient / client goals and outcomes within available resources and specify expected length of time to achieve the goals and outcomes.
4. Deliver and manage a plan of care that is consistent with legal, ethical, and professional obligations, and administrative policies and procedures of the practice environment.
5. Monitor and adjust the plan of care in response to patient / client status.

Intervention

1. Provide physical therapy interventions to achieve patient / client goals and outcomes. Provide effective culturally competent instruction to patient / client and others to achieve goals and outcomes.
2. Complete documentation that follows professional guidelines, guidelines required of the health care systems and guidelines required by the practice setting.
3. Practice using principles of risk management.
4. Respond effectively to patient / client and environmental emergencies in one's practice setting.

Outcomes Assessment

1. Select outcome measures to assess individual and collective outcomes of patient / client using valid and reliable measures that take into account the setting in which the patient / client is receiving services, cultural issues, and the effect of societal factors such as reimbursement.
2. Select outcome measures that are valid and reliable and shown to be generalizable to patient/client populations being studied.

Education, Prevention, Health Promotion, Fitness and Wellness

1. Provide culturally competent physical therapy services for prevention, health promotion, fitness, and wellness to individuals, groups, and communities.

2. Promote health and quality of life by providing information on health promotion, fitness, wellness, disease, impairment, functional limitation, disability, and health risks related to age, gender, culture, and lifestyle within the scope of physiotherapy practice.

Clinical reasoning and Evidence Based Practice:

1. Demonstrate a systematic method for assessing patient/client problems and planning appropriate intervention plans.
2. Apply current science, knowledge, theory, and professional judgment consistently while considering the patient/client perspective in patient/client management.
3. Use information technology consistently to access sources of information to support clinical decisions.
4. Integrate the best evidence consistently for practice from sources of information with clinical judgment and patient/client values to determine the best care for a patient/client.

Attitudinal Objectives

On successful completion of the undergraduate physiotherapy program, the student will have acquired and will demonstrate attitudes essential to the practice of physiotherapy, including Accountability, Altruism and Integrity

1. Practice in a manner consistent with the professional code of ethics.
2. Place patient's/client's needs above the physical therapist's needs.
3. Demonstrate integrity in all interactions with patients/ clients, family members, caregivers, other health care providers, students, other consumers, and payers.

Professional Duty

1. Demonstrate professional behavior in all interactions with patients/clients, family members, caregivers, other health care providers, students, other consumers, and payers.
2. Participate in self-assessment to improve the effectiveness of care.
3. Participate in professional organizations.
4. Demonstrate responsibility for maintaining professional competence.

Compassion/Caring, Communication and Cultural Competence

1. Exhibit caring, compassion, and empathy in providing services to patients/clients.
2. Promote active involvement of the patient/client in his or her care.
3. Expressively and receptively communicate in a culturally competent manner with patients/clients, family members, caregivers, practitioners, interdisciplinary team members, consumers, payers, and policy makers.
4. Effectively communicate in writing patients'/clients' needs with family members, caregivers, practitioners, interdisciplinary team members, consumers, payers.
5. Identify, respect, and act with consideration for patients'/clients' differences, values, preferences, and expressed needs in all professional activities.
6. Maintain confidentiality in a manner consistent with the legal requirements and professional code of ethics.

7. Collect, summarize and interpret cost-effectiveness, cost-benefit and cost-utility information relevant to physical therapy.
8. Identify and interpret physiotherapy interventions, regulations, and policies related to rehabilitation programs.

Social Responsibility and Advocacy

1. Advocate for the health and wellness needs of society.
2. Participate and show leadership in community organizations and volunteer service.

22.5 Program Learning Outcomes

This Program provides opportunities for students to develop and demonstrate:

(i) Knowledge

On completion of the program, students will be able to:

- A1:** Describe the normal structures and functions of human body with relation to the organ systems.
- A2:** Elaborate the environmental and social factors causing diseases, dysfunctions and burden of their functional impairments within the community.
- A3:** Apply specialized knowledge to understand the diseases in terms of processes associated with trauma, inflammation, immune response, degeneration, neoplasia, metabolic disturbance and genetic disorders.
- A4:** Integrate the basic and appropriate clinical knowledge to develop a problem solving approach by using relevant research concepts with adherence to professional standards and regulations.

(ii) Skill

On completion of the program, students will be able to:

- B1:** Evaluate the client/patient by using appropriate clinical methods and procedures associated with physiotherapy practice.
- B2:** Perform physiotherapy intervention procedures by using appropriate clinical and research decisions/tools for rehabilitating clients/patients.
- B3:** Respond effectively with the client/patient and members of the health care professions with advanced written, verbal and nonverbal communications and information technology skills for achieving health care delivery and promotion.
- B4:** Apply the current sciences, skills and professional judgment for assessing, planning and implementing physiotherapy care with relevant research/clinical evidence.

(iii) Aspects of Competence

Autonomy and responsibility:

On completion of the program, students will be able to:

- C1a:** Develop innovative and advanced approaches to evaluating procedures and processes in physiotherapy practice respecting the rights and dignity of the client/patient, family members and other health care providers and provide compassionate care in a trust worthy manner.
- C1b:** Maintain professional competency and manage performance of individual and team as leader or member of team by developing advanced and innovative approaches in providing physiotherapy services during unpredictable situations considering socio- cultural norms and relationships

Role in Context:

On completion of the program, students will be able to:

- C2a:** Deliver highly competent physiotherapy practice and voluntary participation in the professional development programs to enhance their role in the field of physiotherapy practice.
- C2b:** Develop individual or team objectives and achieve maximum outcomes in the field of physiotherapy practice by effectively interacting and maintaining good interpersonal relationship with other health care providers based on ethical and legal guidelines.

Self-Development:

On completion of the program, students will be able to:

- C3:** Develop clinical reasoning skills and self-directed learning in new complex and unfamiliar learning environment for continuous personal and professional development in the field

22.6 Matrix of Program Learning Outcomes (PLO) aligned with QF Emirates

National Standards of Learning Outcomes for Bachelor Program (UAENQF LEVEL 7)	Learning Outcomes of Bachelor of Physiotherapy												
	A1	A2	A3	A4	B1	B2	B3	B4	C1a	C1b	C2a	C2b	C3
I. Knowledge													
Specialized factual and theoretical knowledge and an understanding of the boundaries in a field of work or discipline, encompassing a broad and coherent body of knowledge and concepts, with substantive depth in the underlying principles and theoretical concepts	√	√											
An understanding of allied knowledge and theories in related fields of work or disciplines and in the case of professional disciplines including related regulations, standards, codes, conventions				√									
Understanding of critical approach to the creation and compilation of a systematic and coherent body of knowledge and concepts gained from a range of sources			√										
A comprehensive understanding of critical analysis, research systems and methods and evaluative problem-solving techniques				√					√				
Familiarity with sources of current and new research and knowledge with integration of concepts from outside fields				√									

II. Skill													
Technical, creative and analytical skills appropriate to solving specialised problems using evidentiary and procedural based processes in predictable and new contexts that include devising and sustaining arguments associated with a field of work or discipline					√	√	√		√				
Evaluating, selecting and applying appropriate methods, procedures or techniques in processes of investigation towards identified solutions evaluating and implementing appropriate research tools and strategies associated with the field of work or discipline						√	√						
Highly developed advanced communication and information technology skills to present, explain and/or critique complex and unpredictable matters							√						
III. Aspects of Competence													
III.a. Autonomy and responsibility													
Can take responsibility for developing innovative and advanced approaches to evaluating and managing complex and unpredictable work procedures and processes, resources or learning									√	√		√	
Can manage technical, supervisory or design processes in unpredictable, unfamiliar and varying contexts										√			
Can work creatively and/or effectively as an individual, in team leadership, managing contexts, across technical or professional activities												√	

Can express an internalised, personal view, and accept responsibility to society at large and to socio-cultural norms and relationships										√			
III b. Role in context													
Can function with full autonomy in technical and supervisory contexts and adopt para-professional roles with little guidance													√
Can take responsibility for the setting and achievement of group or individual outcomes and for the management and supervision of the work of others or self in the case of a specialization in field of work or discipline										√			√
Can participate in peer relationships with qualified practitioners and lead multiple, complex groups										√			
Can take responsibility for managing the professional development and direct mentoring of individuals and groups											√		
III c. Self-development													
Can self-evaluate and take responsibility for contributing to professional practice, and undertake regular professional development and/ or further learning can manage learning											√		√
Can manage learning tasks independently and professionally, in complex and sometimes unfamiliar learning contexts											√		√
Can contribute to and observe ethical standard													√

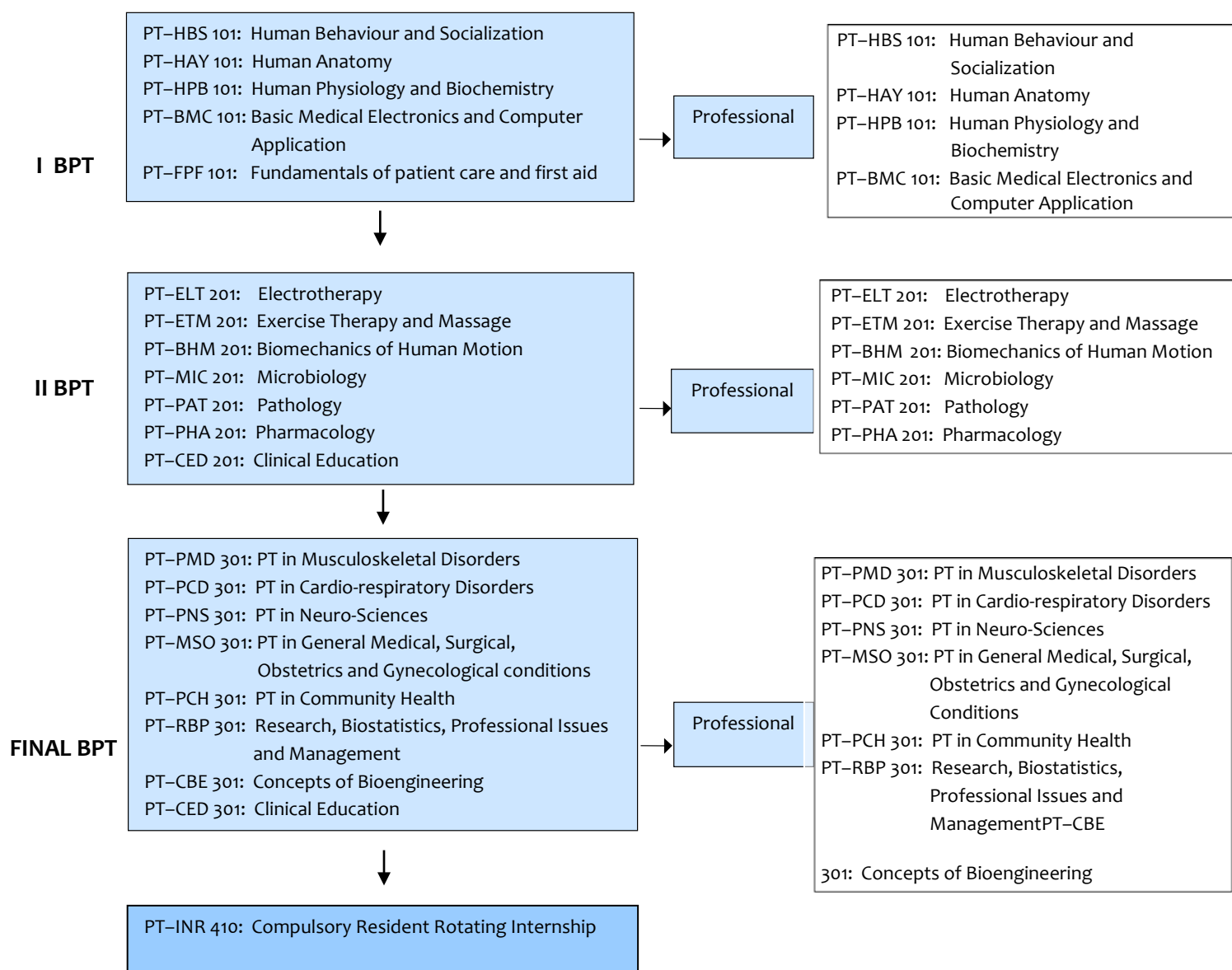
22.7 Program Learning Outcomes aligned with each course

Course Code	Course Title	A1	A2	A3	A4	B1	B2	B3	B4	C1 a	C1 b	C2 a	C2 b	C3
PT-HBS 101	Human Behavior & Socialization	P	P	P	P	P	P	P	P	P	P	P	P	P
PT-HAY 101	Human Anatomy	F	F	F		F	F	F		P		F		P
PT-HPB 101	Human Physiology and Biochemistry	F	P			P		P	P	P	P	P	P	P
PT-BMC 101	Basic Medical Electronics and Computer Applications				P			P		P	P	P		P
PT-FPF 101	Fundamentals of Patient Care and First Aid				P			P			P	P		
PT-POR 101	Physiotherapy Orientation	P	P	p						P		p		P
PT-CED 101	Clinical Education	P	P	P		P	P	P		P		P		P
PT-ELT 201	Electrotherapy	F	F	F		F	F	F		F		F		F
PT-ETM 201	Exercise Therapy and Massage	F	F	F	F	F	F	F	F	P	P	P	F	F
PT-BHM 201	Biomechanics of Human Motion	F			F	P	P	P	P	P	F	F	F	P
PT-MIC 201	Microbiology	P	P	P				P		P	P	P	P	P
PT-PAT 201	Pathology	P	P	P	P							P		P
PT-PHA 201	Pharmacology	F	F	F	P	P			P	P	P	P	P	P
PT-CED 201	Clinical Education	F	F	F		F	F	F		F		F		P
PT-PMD 301	Physiotherapy in Musculoskeletal Disorders	F	F	F		F	F	F		F		F		P
PT-PCD 301	Physiotherapy in Cardio-respiratory Disorders	F	F	F		F	F	F		F	F	P	P	P
PT-PNS 301	Physiotherapy in Neuro-Sciences	F	F	F		F	F	F		F		P		P
PT-MSO 301	Physiotherapy in General Medical, Surgical, Obstetrics and Gynecological Conditions	F	F	F	F	F	F	F		P		P		P
PT-PCH 301	Physiotherapy in Community Health		F	F	F	P	P	P	P	P	F	F	F	P
PT-RBP 301	Research, Biostatistics, Professional Issues and Management	P	P	P	P	P	P	P	F	P	P	F	P	P
PT-CBE 301	Concepts of Bioengineering	F	F	F		F	P	P		F		F		P
PT-CED 301	Clinical Education	F	F	F		F	F	F		F		F		P
PT-INR 410	Internship + Project	F	F	F	F	F	F	F	F	F	F	F	F	F

22.8 Program Structure

The BPT program is a four year under graduate program including Compulsory Resident Rotating Internship. First and second BPT are each of one year duration. The final year BPT is one-and-a-half year in duration. After the successful completion of 3 ½ years of education students will undergo a 6 months Compulsory Resident Rotating Internship that provides a valuable experience.

Students who fulfill the graduation requirements and have successfully demonstrated the achievements of all competencies will be awarded the degree of Bachelor of Physiotherapy (BPT).



Course Completion Requirements**Total Contact Hours:****I Year BPT**

(PT-HBS 101) Human Behaviour and Socialization	100
(PT-HAY 101) Human Anatomy	200
(PT-HPB 101) Human Physiology and Biochemistry	200
(PT-BMC 101) Basic Medical Electronics and Computer Applications	200
(PT-FPF 101) Fundamentals of Patient Care and First Aid	60
(PT-POR 101) Physiotherapy Orientation	30
(PT-CED 101) Clinical Education	30

II Year BPT

(PT-ELT 201) Electrotherapy	200
(PT-ETM 201) Exercise Therapy and Massage	300
(PT-BHM 201) Biomechanics of Human Motion	120
(PT-MIC 201) Microbiology	60
(PT-PAT 201) Pathology	80
(PT-PHA 201) Pharmacology	80
(PT-CED 201) Clinical Education	480

Final Year BPT

(PT-PMD 301) Physiotherapy in Musculoskeletal Disorders	250
(PT-PCD 301) Physiotherapy in Cardio-Respiratory Disorders	250
(PT-PNS 301) Physiotherapy in Neuro-Sciences	250
(PT-MSO 301) Physiotherapy in General Medicine, Surgical, O.B.G.	250
(PT-PCH 301) Physiotherapy in Community Health	100
(PT-RBP 301) Research, Biostatistics, Professional Issues and Management	80
(PT-CBE 301) Concepts of Bioengineering	50
(PT-CED 301) Clinical Education	900

22.9 Plan of Study

I Year BPT

Course Code	Course Title	Contact Hours	Pre-requisite (s)
PT-HBS 101	Human Behaviour and Socialization	100	None
PT-HAY 101	Human Anatomy	200	None
PT-HPB 101	Human Physiology and Biochemistry	200	None
PT-BMC 101	Basic Medical Electronics and Computer Applications	200	None
PT-FPF 101	Fundamentals of Patient Care and First Aid	60	None
PT-POR 101	Physiotherapy Orientation	30	None
PT-CED 101	Clinical Education	30	None
TOTAL		820	

II Year BPT

Course Code	Course Title	Contact Hours	Pre-requisite (s)
PT-ELT 201	Electrotherapy	200	PT-HBS 101, PT-HAY 101, PT-HPB 101, PT-BMC 101, PT-FPF 101, PT-POR 101, PT-CED 101
PT-ETM 201	Exercise Therapy and Massage	300	PT-HBS 101, PT-HAY 101, PT-HPB 101, PT-BMC 101, PT-FPF 101, PT-POR 101, PT-CED 101
PT-BHM 201	Biomechanics of Human Motion	120	PT-HBS 101, PT-HAY 101, PT-HPB 101, PT-BMC 101, PT-FPF 101, PT-POR 101, PT-CED 101
PT-MIC 201	Microbiology	60	PT-HBS 101, PT-HAY 101, PT-HPB 101, PT-BMC 101, PT-FPF 101, PT-POR 101, PT-CED 101
PT-PAT 201	Pathology	80	PT-HBS 101, PT-HAY 101, PT-HPB 101, PT-BMC 101, PT-FPF 101, PT-POR 101, PT-CED 101
PT-PHA 201	Pharmacology	80	PT-HBS 101, PT-HAY 101, PT-HPB 101, PT-BMC 101, PT-FPF 101, PT-POR 101, PT-CED 101
PT-CED 201	Clinical Education	480	PT-HBS 101, PT-HAY 101, PT-HPB 101, PT-BMC 101, PT-FPF 101, PT-POR 101, PT-CED 101
TOTAL		1320	

Final Year BPT

Course Code	Course Title	Contact Hours	Pre-requisite (s)
PT-PMD 301	Physiotherapy in Musculoskeletal Disorders	250	PT-ELT 201, PT-ETM 201, PT-BHM 201, PT-MIC 201, PT-PAT 201, PT-PHA 201, PT-CED 201
PT-PCD 301	Physiotherapy in Cardio-respiratory Disorders	250	PT-ELT 201, PT-ETM 201, PT-BHM 201, PT-MIC 201, PT-PAT 201, PT-PHA 201, PT-CED 201
PT-PNS 301	Physiotherapy in Neuro-Sciences	250	PT-ELT 201, PT-ETM 201, PT-BHM 201, PT-MIC 201, PT-PAT 201, PT-PHA 201, PT-CED 201
PT-MSO 301	Physiotherapy in General Medical, Surgical, Obstetrics and Gynecological Conditions	250	PT-ELT 201, PT-ETM 201, PT-BHM 201, PT-MIC 201, PT-PAT 201, PT-PHA 201, PT-CED 201
PT-PCH 301	Physiotherapy in Community Health	100	PT-ELT 201, PT-ETM 201, PT-BHM 201, PT-MIC 201, PT-PAT 201, PT-PHA 201, PT-CED 201
PT-RBP 301	Research, Biostatistics, Professional Issues and Management	80	PT-ELT 201, PT-ETM 201, PT-BHM 201, PT-MIC 201, PT-PAT 201, PT-PHA 201, PT-CED 201
PT-CBE 301	Concepts of Bioengineering	50	PT-ELT 201, PT-ETM 201, PT-BHM 201, PT-MIC 201, PT-PAT 201, PT-PHA 201, PT-CED 201
PT-CED 301	Clinical Education	900	PT-ELT 201, PT-ETM 201, PT-BHM 201, PT-MIC 201, PT-PAT 201, PT-PHA 201, PT-CED 201
TOTAL		2130	

Internship

Course Code	Course Title	Contact Hrs	Pre-requisite (s)
PT-INR 410	Internship + Project	879	Successful completion of all the courses offered 1 st , 2 nd and Final years

Total Contact Hours: 5149

22.10 Course Description

I Year BPT

Course Title	: Human Behaviour and Socialization
Subject Code	: PT-HBS 101
Term	: 1 st and 2 nd Terms
Total Hours of Lectures	: 100 Hours
Lectures	: 4 Hours / Week
Pre-Requisites	: None
Co-Requisites	: PT-HAY 101, PT-HPB 101, PT-BMC 101, PT-FPF 101, PT-POR 101 & PT-CED 101

This course focuses on the study of human psychology from conception to late adulthood, theories of development, normal and abnormal aspects motor, social, emotional and language development; communication and interaction skills appropriate to various age groups. Human sociological concepts, principles and social process, social institutions and various social factors affect the family in rural and urban communities. This course further exposes the students to develop knowledge of various psychosocial issues of the patient and its repercussions on overall health.

Course Title	: Human Anatomy
Subject Code	: PT-HAY 101
Term	: 1 st and 2 nd Terms
Total Hours of Lectures	: 200 Hours
Lectures	: 3 Hours / Week
Practical	: 2 Hours/Week
Seminars/Tutorials	: 2 Hours/Week
Pre-Requisites	: None
Co-Requisites	: PT-HBS 101, PT-HPB 101, PT-BMC 101, PT-FPF 101, PT-POR 101 & PT-CED 101

This course provides the student knowledge of structure of human body including the skeletal and circulatory systems of extremities, trunk, thorax, abdomen, head and neck, neuro-anatomy, emphasis will be given for clinical applications of anatomy. This course also provides the student sound knowledge about systemic illness and structural changes due to the pathological process.

Course Title	: Human Physiology and Biochemistry
Subject Code	: PT-HPB 101
Term	: 1 st and 2 nd Terms
Total Hours of Lectures	: 200 Hours
Lectures	: 3 Hours / Week
Practical	: 2 Hours/Week
Seminars/Tutorials	: 2 Hours/Week

Pre-Requisites	: None
Co-Requisites	: PT-HBS 101, PT-HAY 101, PT-BMC 101, PT-FPF 101, PT-POR 101 & PT-CED 101

This course provide the student knowledge of the normal functions of the human body, with emphasis on physiological processes and homeostatic adaptation to environmental and clinical changes, Systems studied include Musculoskeletal, circulatory, pulmonary, gastro intestinal, endocrine, nervous and excretory systems. This course enables the student to identify the abnormal functions of the human body due to musculoskeletal and systemic disorders.

Course Title	: Basic Medical Electronics and Computer Applications
Subject Code	: PT-BMC 101
Term	: 1st and 2nd Terms
Total Hours of Lectures	: 200 Hours
Lectures	: 3 Hours / Week
Practical	: 2 Hours/Week
Seminars/Tutorials	: 2 Hours/Week
Pre-Requisites	: None
Co-Requisites	: PT-HBS 101, PT-HAY 101, PT-HPB 101, PT-FPF 101, PT-POR 101 & PT-CED 101

This course provides the student knowledge of the various aspects of electricity and medical electronics: as related to its applications in Electrotherapy instruments; including electrical fundamentals magnetism, valves and semiconductors etc. The course also exposes the students to the fundamentals of computers and their application relevant to Physiotherapy practice.

Course Title	: Fundamentals of Patient Care and First Aid
Subject Code	: PT-FPF 101
Term	: 1st and 2nd Terms
Total Hours of Lectures	: 60 Hours
Lectures	: 1 Hour / Week
Pre-Requisites	: None
Co-Requisites	: PT-HBS 101, PT-HAY 101, PT-HPB 101, PT-BMC 101, PT-POR 101 & PT-CED 101

This course provides knowledge of basic physiotherapy procedures, physical management of patients, basic nursing procedures & terminology and administration of first aid in emergencies in the hospital / community.

Course Title	: Physiotherapy Orientation
Subject Code	: PT-POR 101
Term	: 1st and 2nd Terms
Total Hours of Lectures	: 30 Hours

Lectures	: 1 Hour / Week
Pre-Requisites	: None
Co-Requisites	: PT-HBS 101, PT-HAY 101, PT-HPB 101, PT-BMC 101, PT-FPF 101 & PT-CED 101

This course covers an introduction to Physiotherapy and its origin, scope and practice. Importance of various subjects included in the syllabus and its need is discussed. Field visit to a Physiotherapy department in the hospital is undertaken. The knowledge gained in this course will enable the students in getting better understanding of the courses in the forthcoming terms.

Course Title	: Clinical Education
Subject Code	: PT-CED 101
Term	: 1st and 2nd
Total clinical hours	: 30 Hours
Clinical rotation	: 1 Hour / Week
Pre-Requisites	: None
Co-Requisites	: PT-HBS 101, PT-HAY 101, PT-HPB 101, PT-BMC 101, PT-FPF 101 & PT-POR 101

This course will enable the student to experience and develop an understanding of the clinical environment, to develop communication skills with patients, patient relative & team members and to exhibit the standards of professionalism in clinical settings. This course will help the students in managing interpersonal communication in clinical settings.

[II Year BPT](#)

Course Title	: Electrotherapy
Subject Code	: PT-ELT 201
Term	: 3rd and 4th Terms
Total hours of Lectures	: 100 Hours
Total hours of Practical	: 100 Hours
Lectures	: 2 Hours / Week
Seminar/Tutorials	: 1 Hour / Week
Practical	: 3 Hours / Week
Pre-Requisites	: PT-HBS 101, PT-HAY 101, PT-HPB 101, PT-BMC 101, PT-FPF 101, PT-POR 101 & PT-CED 101
Co-Requisites	: PT-ETM 201, PT-BHM 201, PT-MIC 201, PT-PAT 201 & PT-PHA 201

This course provides knowledge and skills to use various electro therapeutic and electro diagnostic modalities used in physiotherapy practice, low frequency stimulation, superficial and deep heating modalities, ultrasound therapy, short wave diathermy, Laser therapy, bio-feedback etc. Other electro therapeutic agents such as infra-red therapy, hot packs, contrast

baths, paraffin wax therapy etc. This course shall also cover other electro therapeutic agents such as infra-red therapy, hot packs, contrast bath, paraffin wax therapy etc. which are used in physiotherapy practice. Importance is also given for instructions on the use of various electro physical modalities and the ability to interpret them. Safety in the use of all electrical equipment also forms part of the course. This course provides knowledge and skills of using electrotherapy equipment that will be used in physiotherapy practice.

Course Title	: Exercise Therapy and Massage
Subject Code	: PT-ETM 201
Term	: 3rd and 4th Terms
Total Hours of Lecture	: 150 Hours
Practical	: 150 Hours
Lectures	: 3 Hours / Week
Seminar	: 1 Hour / Week
Practical	: 3 Hours / Week
Pre-Requisites	: PT-HBS 101, PT-HAY 101, PT-HPB 101, PT-BMC 101, PT-FPF 101, PT-POR 101 & PT-CED 101
Co-Requisites	: PT-ELT 201, PT-BHM 201, PT-MIC 201, PT-PAT 201 & PT-PHA 201

This course provides the knowledge of the principles and application of various therapeutic exercise procedures and massage techniques used in physiotherapy practice. This course also includes exercises, muscle strengthening, peripheral joint mobilization and the use of various equipments used in exercise therapy. Importance of various evaluation methods and the ability to interpret them is highlighted. Various therapeutic interventions such as P.N.F, manual therapy, hydrotherapy, exercises for coordination and balance etc. are also included.

Course Title	: Biomechanics of Human Motion
Subject Code	: PT-BHM 201
Term	: 3rd and 4th Terms
Total Hours of Lectures	: 80 Hours
Practical / Demonstration	: 40 Hours
Lectures/Seminars	: 2 Hours / Week
Demonstration	: 1 Hour / Week
Pre- Requisites	: PT-HBS 101, PT-HAY 101, PT-HPB 101, PT-BMC 101, PT-FPF 101, PT-POR 101 & PT-CED 101
Co-Requisites	: PT-ELT 201, PT-ETM 201, PT-MIC 201, PT-PAT 201 & PT-PHA 201

In this course, student studies relationships of kinematic, kinetics and muscle function of single and multi-axis joints of the extremities and spine. Student is also exposed to considering the application of classic mechanics, including statics, dynamics, solid mechanics, and fluid mechanics to describe movement and the loads placed on biological tissue. The principles of classical mechanics are applied to the study of human motion to provide students with an understanding of the internal and external forces acting on the body during human movement.

Musculoskeletal tissues are examined from a structure and function perspective. The role of muscle in generating force and controlling movement is emphasized.

The discussion of each region will include sections on normal biomechanics and the application of biomechanics to pathological motion.

Course Title	: Microbiology
Subject Code	: PT-MIC 201
Term	: 3rd and 4th Terms
Total Hours of Lectures	: 40 Hours
Demonstrations	: 20 Hours
Lectures	: 1 Hour / Week
Tutorials/Seminar	: 1 Hour / Alternate Week
Pre-Requisites	: PT-HBS 101, PT-HAY 101, PT-HPB 101, PT-BMC 101, PT-FPF 101, PT-POR 101 & PT-CED 101
Co-Requisites	: PT-ELT 201, PT-ETM 201, PT-BHM 201, PT-PAT 201 & PT-PHA 201

This course provides knowledge of common microorganisms causing diseases including nosocomial infections and precautionary measures to protect one-self from acquiring infections. The curriculum includes General Microbiology, Immunology, Bacteriology, Mycology, Virology and Parasitology.

Course Title	: Pathology
Subject Code	: PT-PAT 201
Term	: 3rd and 4th Terms
Total Hours of Lectures	: 60 Hours
Demonstration	: 20 Hours
Lectures	: 1 Hour / Week
Tutorials/CBL	: 1 Hour / Week
Pre-Requisites	: PT-HBS 101, PT-HAY 101, PT-HPB 101, PT-BMC 101, PT-FPF 101, PT-POR 101 & PT-CED 101
Co-Requisites	: PT-ELT 201, PT-ETM 201, PT-BHM 201, PT-MIC 201 & PT-PHA 201

This course provides knowledge of the causes and mechanisms of diseases. The course also includes general pathology and systemic pathology involving the various systems like Heart & Blood vessels, Lungs, Alimentary Tract, Central Nervous System, Muscular System, Skeletal System etc.

Course Title	: Pharmacology
Subject Code	: PT-PHA 201
Term	: 3rd and 4th Terms
Total Hours of Lectures	: 60 Hours
Demonstration	: 20 Hours
Lectures	: 1 Hour / Week
Tutorials/Seminars/Demonstration	: 1 Hour / Alternative Weeks
Pre-Requisites	: PT-HBS 101, PT-HAY 101, PT-HPB 101, PT-BMC 101, PT-FPF 101, PT-POR 101 & PT-CED 101
Co-Requisites	: PT-ELT 201, PT-ETM 201, PT-BHM 201, PT-MIC 201 & PT-PAT 201

This course covers the principles of pharmacology for physiotherapists. The course include study of drugs affecting the Musculoskeletal, C.N.S, Cardiovascular and Respiratory systems, as well as analgesics, hormones and antibiotics. This course enables the student to understand effects of various drugs and their dosage.

Course title	: Clinical Education
Subject code	: PT-CED 201
Term	: 3rd and 4th
Total clinical hours	: 480
Clinical rotation	: 8 / week
Pre-Requisites	: PT-HBS 101, PT-HAY 101, PT-HPB 101, PT-BMC 101, PT-FPF 101, PT-POR 101 & PT-CED 101
Co-requisites	: PT-ELT 201, PT-ETM 201, PT-BHM 201, PT-MIC 201, PT-PAT 201 & PT-PHA 201

This course emphasis on building the learning from the previous practicum by provides the student the opportunity to effectively apply observation and communication principles, perform initial assessment and will be able initiate initial documentation procedures / written communication under supervision.

Final Year BPT

Course Title	: Physiotherapy in Musculoskeletal Disorders
Subject Code	: PT-PMD 301
Term	: 5th, 6th and 7th Terms
Total Hours	: 250 Hours
Lectures, Tutorials and Clinical Sessions	: 5 Hours / Week
Pre-Requisites	: PT-ELT 201, PT-ETM 201, PT-BHM 201, PT-MIC 201, PT-PAT 201, PT-PHA 201 & PT-CED 201
Co-Requisites	: PT-PCD 301, PT-PNS 301, PT-MSO 301, PT-PCH 301, PT-RBP 301 & PT-CBE 301

This course imparts the core knowledge, skills and competencies needed to manage musculoskeletal conditions by the use of appropriate physiotherapy modes.

Students are exposed to the role of the physical therapist in examining musculoskeletal conditions across the lifespan and continuum of care. This course gives the student the practical skills needed to assess and treat musculoskeletal dysfunctions using physiotherapy skills. Clinical reasoning is developed in the identification of patient's ailment and the selection and progression of treatment techniques.

The evidence base supporting physiotherapy in the treatment of the musculoskeletal dysfunction is also discussed. Examination processes are regionally applied and students gain initial exposure to differential diagnosis and interventions. Students further develop concepts of differential diagnosis, prognosis, and interventions for patients with musculoskeletal conditions across the lifespan and continuum of care.

Course Title	: Physiotherapy in Cardio-Respiratory Disorders
Subject Code	: PT-PCD 301
Term	: 5th, 6th and 7th Terms
Total Hours	: 250 Hours
Lectures, Tutorials & Clinical Sessions	: 5 Hours / Week
Pre-Requisites	: PT-ELT 201, PT-ETM 201, PT-BHM 201, PT-MIC 201, PT-PAT 201, PT-PHA 201 & PT-CED 201
Co-Requisites	: PT-PMD 301, PT-PNS 301, PT-MSO 301, PT-PCH 301, PT-RBP 301 & PT-CBE 301

The course will provide students with knowledge and understanding of common cardio respiratory pathologies, the physical manifestations of such pathologies, clinical reasoning process in clinical assessment, diagnosis & therapeutic interventions, physiotherapy treatment options, rationales and treatment selection.

The students will develop communication and practical skills needed to competently assess, safely and effectively treat clients with Cardio-Respiratory disorders to predict and evaluate outcomes as well as develop programs for promotion of good Cardio – Respiratory health for the prevention and recurrence of disease.

Topics covered include common Cardio-Respiratory disorders treated by physiotherapy including ICU management and post-operative rehabilitation following cardiac surgeries.

Course Title	: Physiotherapy in Neuro-Sciences
Subject Code	: PT-PNS 301
Term	: 5th, 6th and 7th Terms
Total Hours of Lectures	: 250 Hours
Lectures, Tutorials and Clinical Sessions	: 5 Hours / Week

Pre-Requisites	: PT–ELT 201, PT–ETM 201, PT–BHM 201, PT–MIC 201, PT–PAT 201, PT–PHA 201 & PT–CED 201
Co-Requisites	: PT–PMD 301, PT–PCD 301, PT–MSO 301, PT–PCH 301, PT–RBP 301 & PT–CBE 301

The course will provide students with knowledge and understanding of the common pathologies seen in Neurology, the physical manifestations of such pathologies, the clinical reasoning process in clinical assessment, diagnosis & therapeutic interventions, physiotherapy treatment options, rationales and treatment selection.

The student will develop communication and practical skills needed to assess competently and treat clients with neurological disorders safely and effectively predict and evaluate outcomes as well as develop programs for promotion of good neurological health for the prevention and recurrence of diseases.

Topics covered include common neurological conditions treated by physiotherapy including P.N.F, M.R.P and other techniques for training, co-ordination and balance.

Course Title	: Physiotherapy in General Medical, Surgical, Obstetrics and Gynecological Conditions
Subject Code	: PT–MSO 301
Term	: 5th, 6th and 7th Terms
Total Hours	: 250 Hours
Lectures, Tutorials and Clinical Sessions	: 5 Hours / Week
Pre-Requisites	: PT–ELT 201, PT–ETM 201, PT–BHM 201, PT–MIC 201, PT–PAT 201, PT–PHA 201 & PT–CED 201
Co-Requisites	: PT–PMD 301, PT–PCD 301, PT–PNS 301, PT–PCH 301, PT–RBP 301 & PT–CBE 301

The course will provide students with knowledge and understanding of the common pathologies seen in General Medical Surgical & Obstetric and Gynecological Conditions, the physical manifestations of such pathologies, the clinical reasoning process in clinical assessment, diagnosis & therapeutic interventions, physiotherapy treatment options, rationales and treatment selection.

The students will develop communication and practical skills needed to assess competently and treat clients with these disorders safely and effectively, to predict and evaluate outcomes as well as develop programs for promotion of good health for the prevention and recurrence of diseases.

Topics covered include common conditions seen in Pediatrics, Dermatology, Psychiatry, Geriatric and OBG treated by physiotherapy.

Course Title	: Physiotherapy in Community Health
Subject Code	: PT-PCH 301
Term	: 5th, 6th and 7th Terms
Total Hours	: 100 Hours
Lectures, Tutorials & Field Visits	: 3 Hours / Week
Pre-Requisites	: PT-ELT 201, PT-ETM 201, PT-BHM 201, PT-MIC 201, PT-PAT 201, PT-PHA 201 & PT-CED 201
Co-Requisites	: PT-PMD 301, PT-PCD 301, PT-PNS 301, PT-MSO 301, PT-RBP 301 & PT-CBE 301

The course will provide students with knowledge and understanding of health promotion within a community based framework. The role of the physiotherapist's contribution in healthcare areas including geriatrics, industrial health, community based rehabilitation and disaster management is explored.

Course Title	: Research, Biostatistics, Professional Issues and Management
Subject Code	: PT-RBP 301
Term	: 7th Term
Total Hours	: 80 Hours
Lectures	: 2 Hours / Week
Pre-Requisites	: PT-ELT 201, PT-ETM 201, PT-BHM 201, PT-MIC 201, PT-PAT 201, PT-PHA 201 & PT-CED 201
Co-Requisites	: PT-PMD 301, PT-PCD 301, PT-PNS 301, PT-MSO 301, PT-PCH 301 & PT-CBE 301

The course will provide students with knowledge and understanding of Research, Biostatistics, Ethics, Professional Issues, and Management, including need for Evidence Based Practice in the field of physiotherapy.

Course Title	: Concepts of Bioengineering
Subject Code	: PT-CBE 301
Term	: 7th Term
Total Hours of Lectures	: 50 Hours
Lectures/Demonstration Sessions	: 2 Hours / Week
Pre-Requisites	: PT-ELT 201, PT-ETM 201, PT-BHM 201, PT-MIC 201, PT-PAT 201, PT-PHA 201 & PT-CED 201
Co-Requisites	: PT-PMD 301, PT-PCD 301, PT-PNS 301, PT-MSO 301, PT-PCH 301 & PT-RBP 301

The course will provide students with knowledge and understanding of application of various prosthetic and orthotic appliances, required to practice effectively as a Physiotherapist.

Course title	: Clinical Education
Subject code	: PT–CED 301
Term	: 5th 6th and 7th
Total clinical hours	: 900
Clinical rotation	: 20 / week
Pre-Requisites	: PT–ELT 201, PT–ETM 201, PT–BHM 201, PT–MIC 201, PT–PAT 201, PT–PHA 201 & PT–CED 201
Co-requisites	: PT–PMD 301, PT–PCD 301, PT–PNS 301, PT–MSO 301, PT–PCH 301, PT–RBP 301 & PT–CBE 301

This course emphasizes on building the learning from the previous clinical education by providing the student opportunity to undertake subjective and objective examination, plan goals and discuss physiotherapy interventions in patients with musculoskeletal, neurological and cardiopulmonary conditions.

**DOCTOR OF PHARMACY
[PHARM D]**

23. DOCTOR OF PHARMACY (Pharm D)

23.1 Overview

Pharm D is bachelor level program spanning over a period of 4 ½ years didactic and 35 weeks of Advanced Pharmacy Practice Experience (APPE). The first two years of the curriculum are designed to educate students in biomedical sciences and behavioral sciences courses. During the third, fourth and fifth years, students concentrate on advanced pharmaceutical studies and management and clinical courses under the strict supervision of qualified faculty members. During the APPE, students will be exposed to the practice of pharmacy in the different medical specialties as part of their clinical experience as they go through the different rotations. The program learning outcomes are aligned to Level 7 of the NQF Emirates (National Qualifications Framework - Emirates).

23.2 Vision

Our vision is to be nationally prominent in pharmaceutical education, research and service and merit international recognition for quality in education, research and service.

23.3 Mission

The Pharm D program will educate students to become competent pharmacists with specialized knowledge in biomedical and behavioral sciences. The graduates will be dedicated to serve the communities and will carry out their pharmaceutical duties with the highest level of ethical and moral standards. The curriculum will also focus and emphasize on the importance of research and encourage students' participation in research activities.

23.4 Goals and Objectives

- I. To offer an exemplary entry-level Doctor of Pharmacy degree program based upon the pharmaceutical care model that prepares students for the general practice of pharmacy in all practice settings.

Objectives

- Ensure that curricular endpoints are being achieved.
- Improve students' skills in problem-solving, critical thinking and communications, both oral and written.
- Continue to develop and implement a comprehensive curricular management and assessment process.
- Utilize both qualitative indicators and quantitative measures to implement curricular improvements.

- Assist in transforming ambulatory practice experiential sites to the pharmaceutical care model (preceptor training).
 - Provide information to students. Extensive career counseling and skills to perform in job interviews.
 - Achieve a high level of student satisfaction with didactic, laboratory and experiential courses, and with the program as a whole.
 - Promote diverse career choices and provide opportunities for post-graduate training and education.
 - Create a technology plan that incorporates technology into the academic and administrative functions of the College.
 - Provide facilities to train students in Professional Pharmacy Practice settings.
 - To acquaint the student to the professional life.
 - To enhance clinical practice skills.
 - To enhance Industrial Pharmacy Practice skills.
- II. To attract and retain a student body of sufficient number and of high quality that reflects the cultural and ethnic diversity of the community that the College serves.

Objectives

- Increase the student applicant pool through more intensive recruitment, advertising, and targeted mailings.
 - Develop promotional materials that enhance the image of the profession and the College.
 - Ensure that advertising and promotional efforts are directed toward diverse cultural and ethnic populations.
 - Revise the admissions decision process to include variables other than G.P.A., e.g., motivation, communication skills, leadership potential.
 - Study the relationship between admissions variables and academic success in the pharmacy program, i.e., predictors.
 - Identify retention and persistence rates, and reasons for attrition.
 - Develop methods and programs to improve retention.
 - Increase financial aid.
 - Adhere to enrollment plan that is appropriate to faculty and other resources.
- III. To attract and retain faculty members demonstrating commitment to effective teaching, and the pursuit of scholarship in both pedagogy and disciplinary areas.

Objectives

- Re-assess plans for faculty members' growth by reviewing teaching needs in the various divisions and placement at experiential sites.
- Implement a more effective faculty recruitment program.
- Develop a mentoring plan for junior faculty.

- Adopt and refine measures to assess and evaluate teaching effectiveness.
- Provide faculty development programs that focus on pedagogy, including innovative teaching methodologies, student assessment techniques, and curriculum evaluation (include volunteer preceptors and adjunct faculty).
- Encourage and provide resources for faculty research and scholarship as measured by peer-reviewed publications, presentations, and other acknowledged means of recognition.
- Support and reward faculty participation in student-sponsored activities.
- Consistent with collective bargaining agreement, foster equitable balanced teaching loads that foster the quality of teaching.
- Identify and nurture faculty leadership.

IV. To improve and enhance the educational environment of the College.

Objectives

- Create an Integrated Pharmaceutical Care Laboratory.
- Utilize modern classroom with appropriate IT equipment needs.
- Construct Drug information center with customized drug database of marketed drugs in UAE that gives information about drug-drug interaction and provide precautions alerts.
- Provide library resources with particular emphasis on access to electronic references and supporting educational programs.
- Expand the size of the Pharmaceutical Study Center.

23.5 Program Learning Outcomes

A. Knowledge

On successful completion of this program the graduate will be able to:

- A1: Describe the physicochemical properties, structure and use of drugs obtained from natural and synthetic sources.
- A2: Explain the methods involved in drug manufacture with special emphasis on design, formulation, quality control, quality assurance and good manufacturing practices (GMP).
- A3: Describe the profile (mechanism, pharmacological actions, dose, dosage regimen, pharmacokinetic properties, interactions, adverse reactions, contraindications etc.) of prescription and nonprescription medication with special emphasis on pharmaceutical care.
- A4: List the therapeutic applications, safety profiles and reported herb-drug interactions of commonly used complementary and alternative medications.
- A5: Explain the principles of pharmacotherapeutic disease management.

A6: Integrate knowledge of basic, biomedical and pharmaceutical sciences in the management of disease.

B. Skill

On successful completion of this program the graduate will be able to:

- B1:** Perform qualitative and quantitative tests for quality control and screening of pharmaceutical products using modern analytical techniques.
- B2:** Collect, organize relevant monograph data for the hospital formulary based on therapeutic principles and pharmacoeconomic considerations.
- B3:** Collect, critically evaluate and interpret literature and develop evidence based therapeutic treatment advice.
- B4:** Participate actively and make recommendations in the pharmacotherapeutic decision making process.
- B5:** Monitor patients for adverse effects and develop strategies to manage and ultimately prevent future adverse experiences.
- B6:** Identify, resolve and develop strategies to prevent all drug related problems in patients.
- B7:** Evaluate drug utilization pattern in the pharmacy practice setting.
- B8:** Apply advanced professional communication skills for interaction with patients and other healthcare providers.
- B9:** Design and conduct research activities.

C. Aspects of Competence

C1. Autonomy and Responsibility

On successful completion of this program the graduate will be able to:

- C1a:** Dispense prescriptions appropriately and accurately.
- C1b:** Monitor and counsel patients to ensure desired therapeutic outcomes.

C2. Role in Context

On successful completion of this program the graduate will be able to:

- C2a:** Exhibit ethical standards and law in the appropriate area of practice.
- C2b:** Identify the responsibilities of the pharmacist in both product and patient oriented services.
- C2c:** Demonstrate a basic understanding of the strengths and problems of cultural diversity and the responses of society as they relate themselves to others.
- C2d:** Develop and implement a pharmaceutical care plan.
- C2e:** Participate in community healthcare programs and contribute to the development of health care system.
- C2f:** Participate in professional governance and policy formulation while considering issues affecting the profession of pharmacy.

C2g: Engage in collaborative and interdisciplinary approaches and teamwork for improving population health.

C3. Self-Development

On successful completion of this program the graduate will be able to:

C3: Demonstrate quality of self-assessment and self-directed life-long learning, so as to acquire necessary knowledge, skills and maintain one's competence.

23.6 Matrix of Program Learning Outcomes (PLO) aligned with QF Emirates

National Standards of Learning Outcomes for Master Level Program (UAENQF Level 7)	Learning Outcomes of Pharm D program																				
	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C
	1	2	3	4	5	6	1	2	3	4	5	6	7	8	9	a	b	a	b	c	d
I. Knowledge																					
Specialized factual and theoretical knowledge and an understanding of the boundaries in a field of work or discipline, encompassing a broad and coherent body of knowledge and concepts, with substantive depth in the underlying principles and theoretical concepts	√	√	√		√	√															
An understanding of allied knowledge and theories in related fields of work or disciplines and in the case of professional disciplines including related regulations, standards, codes, conventions	√	√	√		√	√															
Understanding of critical approach to the creation and compilation of a systematic and coherent body of knowledge and concepts gained from a range of sources	√	√	√		√	√															
A comprehensive understanding of critical analysis, research systems and methods and evaluative problem-solving techniques					√	√															
Familiarity with sources of current and new research and knowledge with integration of concepts from outside fields					√	√															
II. Skills																					
Technical, creative and analytical skills appropriate to solving specialised problems using evidentiary and procedural based processes in predictable and new contexts that include devising and sustaining arguments associated							√		√	√	√	√	√	√	√						

[illegible]

23.7 Program Learning Outcomes aligned with each course

[illegible]

PS 122	General Pharmacology	P			F		P			P	P		P		P	P					P	P	P	P
PS 132	Medical Terminology	P					P		P	P														F
PS 133	Principles of Human Anatomy and Physiology II						P							P	P	P		F		P			P	F
GE 126	UAE Society													P			P		F				P	F
GE 128	Human Behavior and Socialization													P			F	P		F				F
GE 130	Composition and Modern English II								P	F	P			F	P		F	P				P	P	F
PS 211	Pharmaceutics and Drug Stability	F	F				P	F										P						F
PS 221	Pharmaceutical Analytical Chemistry	P	P				P	P						P										P
PS 231	Pharmacology and Therapeutics I	P		F			P			P							P							P
PS 232	Biochemistry I	F	P					F		F						P		P						P
GE 210	Professional Communications Skills								P	F	P			F	P		P			F		P		F
PS 222	Instrumental Analysis	P	P				P	F							P									P
PS 223	Medicinal and Pharmaceutical Chemistry I	P	P					P							P									P
PS 233	Pathology	F	P					P	P	P						P		P						F
PS 234	Pharmacology and Therapeutics II	P		F			P			P							P							P
PS 235	Biochemistry II	F		F				F		F						P		P						P
PS 212	Design and Formulation of Dispersion Systems	F	F					F							P			P						F
PS 312	Biopharmaceutics and Pharmacokinetics I	P					P								P			P				P	P	P

122

PP 544	Pathophysiology and Pharmacotherapy Course: Gastroenterology and Nutrition			F	P	F	F		P	F	F	F	F	P	F	P	P	F	P	F		F	P			F
PP 545	Pathophysiology and Pharmacotherapy Course: Renal Impairments and Drug Monitoring			F	P	F	F		P	F	F	F	F	P	F	P	P	F	P	F		F	P			F
PP 546	Pathophysiology and Pharmacotherapy Course: Endocrinology, Rheumatology, Obstetrics and Gynecology			F	P	F	F		P	F	F	F	F	P	F	P	P	F	P	F		F	P			F
PP 547	Pathophysiology and Pharmacotherapy Course: Infectious Disease and Hematology			F	P	F	F		P	F	F	F	F	P	F	P	P	F	P	F		F	P			F
PP 548	Pathophysiology and Pharmacotherapy Course: Nuclear Pharmacy and Oncology			F	P	F	F		P	F	F	F	F	P	F	P	P	F	P	F		F	P			F
PP 549	Clinical Seminar			F	P	F	F		P	F	F	F	F	P	F	P	P	F	P	F		F	P			F
CR 542	Drug Information Rotation	F	F	F	P			F	F	F	P						P	F	F	F						F
CR 543	Inpatient Hospital Pharmacy Practice Rotation	F	F	F				F	P	F	F						F	F	F	F	F	F				F
CR 544	Community Pharmacy Care Rotation	F	F	F				F	P	F	F						F	F	F	F	F	F				F
CR 545	Adult Acute Pharmaceutical Care	F	F	F				F	P	F	F						F	F	F	F	F	F				F

23.9 Plan of Study

Semester - 1

Course Code	Course Title	C H	L H	N L H	Pre-requisites
GE 110	Composition and Modern English I	3	3	0	None
GE 112	Mathematics for the Biological Sciences	3	3	0	None
GE 114	General Chemistry	3	3	0	None
GE 120	Computer Concepts and Applications	3	2	2	None
PS 111	Pharmacy Orientation	1	1	0	None
PS 131	Principles of Human Anatomy and Physiology I	4	3	2	None
Semester Total		17	15	4	

Semester - 2

Course Code	Course Title	C H	L H	N L H	Pre-requisites
GE 124	Islamic Studies	3	3	0	None
PS 112	Pharmaceutical Calculations and Solution Dosage Forms	3	2	2	None
PS 121	Pharmaceutical Organic Chemistry	4	3	2	GE 114
PS 122	General Pharmacognosy	3	2	2	None
PS 132	Medical Terminology	2	2	0	None
PS 133	Principles of Human Anatomy and Physiology II	3	2	2	PS 131
Semester Total		18	14	8	

Semester - 3

Course Code	Course Title	C H	L H	N L H	Pre-requisites
GE 128	Human Behavior and Socialization	3	3	0	None
GE 130	Composition and Modern English II	3	3	0	GE 110
GE 210	Professional Communication Skills	3	3	0	GE 110
PS 211	Pharmaceutics and Drug Stability	3	2	2	PS 112
PS 221	Pharmaceutical Analytical Chemistry	3	2	2	PS 121
PS 231	Pharmacology and Therapeutics I	3	2	2	PS 133
PS 232	Biochemistry I	3	2	2	PS 131, PS 121
Semester Total		21	17	8	

Semester - 4

Course Code	Course Title	C H	L H	N L H	Pre-requisites
GE 126	UAE Society	3	3	0	None
PS 222	Instrumental Analysis	3	2	2	PS 221
PS 223	Medicinal and Pharmaceutical Chemistry I	4	3	2	PS 221
PS 233	Pathology	3	3	0	PS 133

PS 234	Pharmacology and Therapeutics II	3	2	2	PS 231
PS 235	Biochemistry II	3	2	2	PS 232
Semester Total		19	15	8	

Semester - 5

Course Code	Course Title	C H	L H	N L H	Pre-requisites
PS 212	Design and Formulation of Dispersion Systems	4	3	2	PS 211
PS 312	Biopharmaceutics and Pharmacokinetics I	3	2	2	PS 211
PS 313	Biostatistics and Research Methodology	3	2	2	None
PS 321	Medicinal and Pharmaceutical Chemistry II	3	2	2	PS 223
PS 331	Pharmacology and Therapeutics III	3	2	2	PS 234
PS 332	Basic Microbiology and Immunology	3	2	2	None
Semester Total		19	13	12	

Semester - 6

Course Code	Course Title	C H	L H	N L H	Pre-requisites
PS 314	Biopharmaceutics and Pharmacokinetics II	3	2	2	PS 312
PS 315	Pharmaceutical Technology	3	2	2	PS 211
PS 322	Complementary and Alternative Medicine	2	2	0	PS 122
PS 333	Interpretation of Clinical Laboratory Data	3	2	2	PS 235
PS 334	Pathogenic Microbiology and Antibiotics	3	2	2	PS 231, PS 332
PS 335	Bioassay and Drug Screening	1	1	0	PS 331
PS 341	Health Care System and Pharmaceutical Care	2	2	0	None
PS 342	Drug Information and Literature Evaluation	2	1	2	PS 331
Semester Total		19	14	10	

Summer Term - 1

Course Code	Course Title	C H	L H	N L H	Pre-requisites
PS 343	Community Pharmacy Training I	3	0	45	None
Semester Total		3			

Semester - 7

Course Code	Course Title	C H	L H	N L H	Pre-requisites
PS 311	Sterile Dosage Forms	3	2	2	PS 211
PS 411	Clinical Pharmacokinetics and Therapeutic Drug Monitoring	3	2	2	PS 314
PS 414	OTC Drugs and Products	3	2	2	PS 331

PS 445	Pharmacoeconomics [Faculty elective course]	3	3	0	None
PS 441	Communication Skills in Pharmacy Practice	2	2	0	None
PS 443	Clinical Pharmacy – Disease and Therapeutic Management I	3	2	2	PS 331
Semester Total		17	13	8	

Semester - 8

Course Code	Course Title	C H	L H	N L H	Pre-requisites
PS 446	Physical Assessment	2	0	4	PS 443
PS 415	Professional Pharmaceutical Ethics and Legislations	2	2	0	None
GE 140	Ethics and the Modern World	3	3	0	None
PS 431	Drugs of Abuse and Clinical Toxicology	3	2	2	PS 331
PS 444	Clinical Pharmacy – Disease and Therapeutic Management II	3	2	2	PS 443
PS 416	Clinical Problems in Parenteral Nutrition and Intravenous Therapy [Faculty Elective Course]	3	3	0	PS 311
PS 447	Medication Errors: Causes, Prevention and Current Issues	2	2	0	PS 414
Semester Total		18	14	8	

Summer Term - 2

Course Code	Course Title	C H	L H	N L H	Pre-requisites
PS 448	Community Pharmacy Training II	3	0	45	PS 343
Semester Total		3			

Semester - 9

Course Code	Course Title	C H	L H	Pre-requisites
PP 542	Pathophysiology and Pharmacotherapy Course: Cardiology	2	2	Successful completion of the courses till semester 8
PP 543	Pathophysiology and Pharmacotherapy Course: Psychiatry and Neurology	2	2	
PP 544	Pathophysiology and Pharmacotherapy Course: Gastroenterology and Nutrition	2	2	
PP 545	Pathophysiology and Pharmacotherapy Course: Renal Impairments and Drug Monitoring	2	2	
PP 546	Pathophysiology and Pharmacotherapy Course: Endocrinology, Rheumatology, Obstetrics and Gynecology	2	2	
PP 547	Pathophysiology and Pharmacotherapy Course: Infectious Diseases and Hematology	2	2	
PP 548	Pathophysiology and Pharmacotherapy Course: Nuclear Pharmacy and Oncology	2	2	

PP 549	Clinical Seminar	1	1	
Semester Total		15	15	

C H – Credit Hours, L H – Lecture Hours, N L H – Non Lecture Hours

Faculty Elective Course [Student selects courses equivalent to 6 credits]

Course Code	Course Title	Credit Hours
PS 412	Dispensing of Medications	2
PS 416	Clinical Problems in Parenteral Nutrition and Intravenous Therapy	3
PS 442	Applied Clinical and Diagnosis Analysis	2
PS 445	Pharmacoeconomics	3
PP 541	Principles of Pathophysiology and Immunology	2

Advanced Pharmacy Practice Experience (APPE)

Course Code	Course Title	Weeks	Credit Hours	Pre-requisite
CR 542	Drug Information Rotation	5	5	Successful Completion of all the courses from semester 1 to 9
CR 543	Inpatient Hospital Pharmacy Practice Rotation	5	5	
CR 544	Community Pharmacy Care Rotation	5	5	
CR 545	Adult Acute Pharmaceutical Care Rotation	5	5	
----	Elective Rotation (Clinical) I	5	5	
----	Elective Rotation (Clinical) II	5	5	
----	Elective Rotation (Non-clinical) III	5	5	
Total		35	35	

Elective Rotation - Clinical [Student selects two from the following list]

Course Code	Course Title	Credit Hours
CR 651	Oncology	5
CR 652	Infectious Diseases	5
CR 653	Cardiology	5
CR 654	Family Medicine	5
CR 655	Psychiatry	5
CR 656	Pediatrics	5

Elective Rotation – Non clinical [Student selects one from the following list]

Course Code	Course Title	Credit Hours
CR 671	Pharmaceutical Industry *	5
CR 672	Disease State Management*	5
CR 673	Nuclear Pharmacy*	5
CR 674	Consulting Pharmacy*	5

* Subject to Availability

Only students with CGPA of 3 and above at the end of 4th year will be permitted to opt for training at sites outside Thumbay Hospitals.

23.10 Advanced Pharmacy Practice Experience (APPE)

Advanced Pharmacy Practice Experience (APPE) increases the overall Pharm D program credibility and promotes professional excellence. APPEs provide the departments/University a means to validate the university's curriculum in a working environment. The APPE experience gives an insight into the practice of the chosen profession and is in itself a strong motivating factor for the learner to continue and pursue higher education and specialize further in the chosen field of study.

APPEs create opportunities for employment as candidates have had the chance to prove themselves as employees. They give employers the opportunity to evaluate prospective employees.

APPE helps students to have on the job experience under supervision. This provides a real life experience of the future workplace and prepares the graduate for the future work place.

It also serves to provide opportunities to attain higher skills levels appropriate as the student has completed the didactic requirements of the course and is now given opportunities to further improve his skills and master it before he enters independent practice.

Through written assignments, group discussion sessions, and practical exercises, the academic component of the APPE course complements the experience of the APPE, helping them to evaluate and reflect on their work experience so as to prepare them better for the world of work in the future. At the end of the APPE, it is expected that the candidate will not only understand the world of work in economic policy better, but that he/she will understand his/her potential place better in that world.

The APPE is considered as a valuable clinical practice, a student may experience within a professional environment, allows the students to implement the overall acquired knowledge, enhance their skills, and assess their clinical performances and outcomes. Three important elements distinguish an APPE from a short-term job or volunteer work: the academic background which the candidate brings to the practical site, active reflection and participation during the APPE period, and the final evaluation which must demonstrate if the learning outcomes have been achieved. APPE provides the students with real life experience in the profession of Pharmacy Practice, enhancing their clinical skills and offering the opportunities for potential appointment after graduation.

APPE shall be offered only after successful completion of all 1-9 semester courses. All pharmacy experiences shall be planned and evaluated. Since a successful APPE requires an agreement on the objectives, scope of work, and outcomes among the four parties involved - the student, the assigned clinical faculty member, the clinical site supervisor and the Clinical Director, it is essential that careful planning precedes the direct experience.

23.11 List of Rotations offered in APPE Program

Mandatory Rotations

Course Code	Title	Weeks	Credit Hours	Pre-requisites
CR 542	Drug Information Rotation	5	5	Successful Completion of all the courses from Semester 1 to 9
CR 543	Inpatient Hospital Pharmacy Practice Rotation	5	5	
CR 544	Community Pharmacy Care Rotation	5	5	
CR 545	Adult Acute Pharmaceutical Care Rotation	5	5	

Clinical Rotations [Students selects two from the following list]

Course Code	Title	Weeks	Credit Hours	Pre-requisites
CR 651	Oncology	5	5	Successful Completion of all the courses from Semester 1 to 9
CR 652	Infectious Diseases	5	5	
CR 653	Cardiology	5	5	
CR 654	Family Medicine	5	5	
CR 655	Psychiatry	5	5	
CR 656	Pediatrics	5	5	

Elective Rotations [Students selects one from the following list]

Course Code	Title	Weeks	Credit Hours	Pre-requisites
CR 671	Pharmaceutical Industry *	5	5	Successful Completion of all the courses from Semester 1 to 9
CR 672	Disease State Management *	5	5	
CR 673	Nuclear Pharmacy*	5	5	
CR 674	Consulting Pharmacy*	5	5	

*** Subject to availability**

Only students with CGPA of 3 and above at the end of 4th year will be permitted to opt for training at sites outside GMC Hospitals.

23.12 Course Description

Semester - 1

GE 110: Composition and Modern English I (3 CH)

This course provides an intensive instruction in writing process focusing on the organization of ideas in well-developed expository paragraphs with some emphasis on developing vocabulary. It prepares students for expository and argumentative essays that will be discussed in Composition and Modern English II (GE 130). Prerequisite: None

GE 112: Mathematics for the Biological Sciences (3 CH)

This course provides knowledge and skills of mathematics including concepts of calculus needed for students of biological sciences. The course covers real number system, sets and their representations, functions, linear functions, linear inequalities, other simple functions, composite functions, limits as x goes to infinity, increments and rates, limits, continuous functions, the derivative, derivative of power functions, product and quotient rules, derivatives of composite functions, exponential functions, inverse functions, and logarithms, natural logarithms and exponentials, trigonometric functions, limits of trigonometric functions, derivatives of trigonometric functions, inverse trigonometric functions, anti-derivatives, method of substitution, method of partial fractions, trigonometric substitutions, integration by parts, areas under curves, definite integrals, more on areas, volumes of revolution, linear first order differential equations. The objective of the course is to prepare the students to apply principles of mathematics, including functions and their limits, derivatives of functions, integrals and solve first order linear equations to understand biological systems. *Prerequisite: None*

GE 114: General Chemistry (3 CH)

The course covers topics related to the different chemical reactions, measurements and figures, electronic structure and periodicity. The chemical bonding, molecular forms, intermolecular bonding and forces are also discussed. In addition to the physical and chemical properties, the common organic reactions with emphasis and focus on the chemical bonding and different reactions of alkanes, cycloalkanes, alkynes, alkenes and aromatic compounds. *Prerequisite: None*

GE 120: Computer Concepts and Applications (3 CH)

This course provides knowledge, skills and competencies of relevant software applications, which help the students to improve their professional competence. Students will learn the concepts of computer hardware and software and become familiar with a variety of computer applications, including word processing, multimedia presentations, spreadsheets, databases and Hospital Information Management System. Students will also investigate internet-based applications, working with email and learning how to browse the web. Coursework also include activities that explore social and ethical issues related to computers. *Prerequisite: None*

PS 111: Pharmacy Orientation (1 CH)

The course discusses the different roles of pharmacists in both product oriented services and patient oriented services at the different sites of job opportunities that pharmacists might have. Courses, competencies within the curriculum and the expected outcomes will be

outlined. Students' associations within the college, roles, activities and mode of participation will also be detailed. *Prerequisite: None*

PS 131: Principles of Human Anatomy and Physiology I (4 CH)

The course deals with an integrated knowledge of both the anatomical structure and physiological functions of human body. The anatomy of the human skull and the different systems; muscular, respiratory, digestive, cardiovascular, nervous and reproductive are discussed. The course also includes the structure and function of the normal cell; tissues in general, their different types, microscopic characteristics, locations, distribution and functions in the human body and of the different organ system and their respective roles and function in the organization of the body. The physiology is integrated with anatomy for each system of the human body. Topics which are covered in detail include the organization, regulation and function of the muscular, gastrointestinal, respiratory, cardiovascular, renal, endocrine, nervous and reproductive systems. *Prerequisite: None*

Semester – 2

GE 124: Islamic Studies (3 CH)

The course aims to provide knowledge of the concepts and beliefs in Islam that form the basis of Islamic culture. The students are expected to identify the differences, compare values and preferences in Islamic culture with the existing ones. The course consists of a general review of Islam as a religion and as an approach to life. The objective of this course is to enable the student to demonstrate awareness of the effects of culture upon interpersonal communications and interact appropriately to the culture of the colleague/patient/client. *Prerequisite: None*

PS 112: Pharmaceutical Calculations and Solution Dosage Forms (3 CH)

The course deals with dispensing of different types of prescriptions, Latin terminology and abbreviations involved, Pharmaceutical calculations needed in prescriptions and the basic technique of compounding simple aqueous and non-aqueous pharmaceutical solution dosage forms. *Prerequisite: None*

PS 121: Pharmaceutical Organic Chemistry (4 CH)

The pharmaceutical organic chemistry course is aimed to present fundamentals of certain topics in organic chemistry and applications in a brief and suitable manner related to the pharmaceutical field of study. It covers the pharmaceutical importance of functional groups, aliphatic and aromatic hydrocarbons, alkyl and aryl halides, alcohols, ethers and epoxides, phenols, amines, carboxylic acids and esters, and heterocyclic compounds. The course will emphasize the pharmaceutical importance of these functional groups, their molecular structures and properties, classification, structure, conformations, nomenclature, physical

properties, preparation and reactions. *Prerequisite: GE 114*

PS 122: General Pharmacognosy (3 CH)

The subject Pharmacognosy deals with the general study of important medicinal plants. The study includes their origin, morphology, histology, constituents and uses. The drugs are classified into groups according to their main therapeutic values. This course prepares students to acquire a thorough knowledge of medicinal plants, including their origin, systems of classification, important active ingredients, structures and methods for detection, medicinal uses, preparations and dosage. *Prerequisite: None*

PS 132: Medical Terminology (2 CH)

This course describe the most relevant medical terms used in medical and pharmaceutical sciences. Students will learn the Latin prefix and suffix commonly used in medical terms. The course will give emphasis on the mechanism of word-building system from the origin of the term. The course will provide pharmacy students with the basic definitions and explanation for medical terms used for essential medical and pharmaceutical sciences. Students will use Stedman's Medical dictionary software to group medical and pharmaceutical terms as weekly assignments in a computer laboratory. *Prerequisite: None*

PS 133: Principles of Human Anatomy and Physiology II (3 CH)

The course deals with an integrated knowledge of both the anatomical structure and physiological functions of human body. The anatomy of the human skull and the different systems; muscular, respiratory, digestive, cardiovascular, nervous and reproductive are discussed. The course also includes the structure and function of the normal cell; tissues in general, their different types, microscopic characteristics, locations, distribution and functions in the human body and of the different organ system and their respective roles and function in the organization of the body. The physiology is integrated with anatomy for each system of the human body. Topics which are covered in detail include the organization, regulation and function of the muscular, gastrointestinal, respiratory, cardiovascular, renal, endocrine, nervous and reproductive systems. *Prerequisite: PS 131*

Semester – 3

GE 126: UAE Society (3 CH)

This course focuses on the knowledge related to the nature of the UAE society and its political, geographical, cultural, demographical and social aspects. It studies the perspective of the Emirates Society towards contemporary international changes. This course will allow the student to explore the perspectives of the Emirates society in a global context. *Prerequisite: None*

GE 128: Human Behavior and Socialization (3 CH)

An overview of the main topics in general psychology includes biological basis of behavior and mental processes: sensation and perception, learning, motivation, intelligence, human development, personality and behavioral disorders. The course covers sociological concepts such as socialization, social factors, social groups and leadership, culture and health, social security, changing trends of family and community, social trends. It will enable students to demonstrate appropriate human behaviour in social context. *Prerequisite: None*

GE 130: Composition and Modern English II (3 CH)

Intensive instruction in writing process focuses on organization of ideas in well-developed expository and argumentative essays with some emphasis on developing vocabulary. It prepares students for professional communication skills (GE 210). *Prerequisite: GE 110*

PS 211: Pharmaceutics and Drug Stability (3 CH)

The course will discuss the principles of physical pharmacy: physicochemical principles of pharmaceutical systems like-solubility and distribution phenomena, relationship between states of matter; solution properties and thermodynamics as applied to pharmaceutical systems. The solution kinetics of drug degradation, rate processes and reaction order for simple & complex reactions will be discussed. Models for drug stability that predict the effect of formulation and storage factors on expiration date will also be illustrated.

Prerequisite: PS 112

PS 221: Pharmaceutical Analytical Chemistry (3 CH)

The course covers the chemical purity and its control; pharmacopoeial standards and specifications, theoretical basis of quantitative analysis of the pharmaceutical compounds, volumetric methods based on acid-base, oxidation-reduction, precipitation, diazodisation, complexation and non-aqueous titrations and gravimetric method. The practical part deals with the titrimetric and gravimetric analysis and the quantitation of a number of drugs in their pharmaceutical formulations. *Prerequisite: PS 121*

PS 231: Pharmacology and Therapeutics I (3 CH)

This course describes the general principles of pharmacology with detailed description of pharmacokinetics, pharmacodynamics, adverse drug effects and drug evaluation. It also includes detailed study of drugs acting on the sympathetic and parasympathetic system, respiratory system and autacoids. On completion of the course, students should be familiar with various groups of drugs (classified according to anatomical / therapeutic classification), their mechanisms of actions, adverse effects, indications and contraindications. Particular emphasis is given to prototypical drugs from each group to aid the teaching of the principles of therapeutics. Drugs in current clinical use are generally covered, but other drugs may also

be included, if they demonstrate a principle or a special pharmacological mechanism.
Prerequisite: PS 133

PS 232: Biochemistry I (3 CH)

This course is designed to provide the molecular and biochemical foundations necessary for understanding the basis of pharmacotherapeutics. The course involves the study of biomolecular interactions, macromolecular structure and functions, cellular catabolic and anabolic pathways leading to the production of energy, nitrogenous waste, macromolecular building blocks and other cellular components, DNA metabolism, gene expression and biochemical bases of diseases. *Prerequisites: PS 131; PS 121*

Semester - 4

GE 210: Professional Communication Skills (3 CH)

This course is designed to provide students with the knowledge and skills that are essential for effective professional communication. Topics include audience analysis, organization, persuasion, credibility, and delivery. Ideally, the students should be able to apply these skills in a variety of public speaking situations. *Prerequisite: GE 110*

PS 222: Instrumental Analysis (3 CH)

This course describes the basic principles covering instrumental methods of analysis in areas of electrochemical and spectroscopic analysis such as the potentiometry, conductometry, polarography, amperometry, UV-visible spectrophotometry and fluorimetry. The applications of these methods in pharmaceutical compounds, dosage forms and drugs and their metabolites in biological fluids are also included. *Prerequisite: PS 221*

PS 223: Medicinal and Pharmaceutical Chemistry I (4 CH)

This course is dealing with the relationship between chemical structure and biological action; and the physico-chemical properties of drugs, which affect their formulation, absorption and distribution in the body and include the effects of molecular modifications on receptor binding and metabolism as they relate to clinical response. Metabolism of drugs and factors affecting it will be explained fully. The course also covers several drug classes with special emphasis on their structure-activity relationship, chemical and pharmacological classification, synthesis, pharmacological and mechanism of action, pharmacokinetic and pharmacodynamic aspects. *Prerequisite: PS 221*

PS 233: Pathology (3 CH)

This course will introduce the students to the fundamentals of pathology. The course covers characteristics of cell, inflammation, tissue repair, hemodynamic dysfunction, neoplasia,

nutritional diseases and pathology of infectious diseases. This course is aimed to provide students thorough knowledge of general principles of pathology, and to prepare students for better understanding of pharmacotherapeutics of infective and toxicological conditions, as well as for the clinical pharmacy courses. *Prerequisite: PS 133*

PS 234: Pharmacology and Therapeutics II (3 CH)

This course covers drugs acting on the cardiovascular system, renal system, hematopoietic system and gastrointestinal system with the emphasis on teaching students on bridging the gap between purely basic sciences and clinical sciences to promote a safe and effective drug use optimizing benefits and minimizing risks. With such views in mind, the present course is designed as a clinically oriented subject rather than a purely basic one. Therefore, therapeutic applications of drugs and their adverse effects are emphasized throughout the course. *Prerequisite: PS 231*

PS 235: Biochemistry II (3 CH)

This course focuses on the topics of bioenergetics, metabolism of carbohydrates, lipids, proteins, energy releasing and energy consuming metabolic processes; the regulation of synthesis and breakdown of sugars, lipids, nucleic acids and amino acids. This course is also designed to provide understanding of biosynthesis of macromolecules and it gives students a solid background for understanding the Interpretation of Clinical Lab Data (PS 333). *Prerequisite: PS 232*

Semester – 5

PS 212: Design and Formulation of Dispersion Systems (4 CH)

This course will introduce the students to the fundamental principles of interfacial phenomena, adsorption, dispersion system, rheology, polymorphism and their impact on the preparation and design of thermodynamically stable heterogeneous dosage form. Suspensions, emulsions and aerosols will be detailed. *Prerequisite: PS 211*

PS 312: Biopharmaceutics and Pharmacokinetics I (3 CH)

This course is designed to familiarize students with both biological factors and physicochemical characteristics of the drug influence on drug absorption from gastrointestinal tract; emphasize the importance of dosage form selection and how it affects the clinical outcome. In addition, the course will discuss the pharmacokinetics of drug disposition following one compartment model for different routes of administration. The students will also study the biopharmaceutics of non-oral medication, factors affecting bioavailability of drugs including pharmacokinetic variability, and biopharmaceutics of sustained-release and new drug delivery systems. *Prerequisite: PS 211*

PS 313: Biostatistics and Research Methodology (3 CH)

The course will prepare the students to use biostatistics and research methodologies. Students will be able to evaluate the appropriateness of research methodologies designed to answer a research question or to test a hypothesis, select an appropriate statistical test, analyze the data, explain and evaluate the obtained results, and apply the results to decisions about research and practice. Without these skills, pharmacists are dependent upon research interpretations of medical and pharmaceutical writers, product claims, from the pharmaceutical industry, journalistic sources, and popular press. *Prerequisite: None*

PS 321: Medicinal and Pharmaceutical Chemistry II (3 CH)

This course is dealing with the chemical structures, nomenclatures, synthesis, interrelation of drug with receptors, structure-activity relationship and metabolites of the different chemical classes, including cardiovascular agents, diuretics, analgesics, antihistamines, drugs acting on autonomic and central nervous systems. The course also covers several drug classes with special emphasis on their structure-activity relationship, chemical and pharmacological classification, synthesis, pharmacological mechanism of action, pharmacokinetics and pharmacodynamic aspects. *Prerequisite: PS 223*

PS 331: Pharmacology and Therapeutics III (3 CH)

The course covers drugs acting on the central nervous system, and pharmacotherapy of endocrine disorders with the emphasis on bridging the gap between purely basic sciences and clinical sciences to promote a safe and effective drug use optimizing benefits and minimizing risks. With such views in mind, the present course is designed as a clinically oriented subject rather than a purely basic one. Therefore, therapeutic applications of CNS and endocrine drugs and their adverse effects are emphasized throughout the course. *Prerequisite: PS 234*

PS 332: Basic Microbiology and Immunology (3 CH)

This course deals with the study of the biological characters of different groups of bacteria and viruses, their classification, structure and ultrastructure, nutrition, metabolism, biosynthesis, growth, and genetics. The students are trained to practise universal safety precautions while working in the laboratory using laminar air flow hoods. It also familiarizes the students with the mechanism of action of antimicrobials, antimicrobial sensitivity testing as well as sterility testing. In addition, they are also introduced to the basic principles of immunology. *Prerequisite: None*

PS 314: Biopharmaceutics and Pharmacokinetics II (3 CH)

This course is dealing with rate processes of drug disposition, derivation of mathematical models to calculate the time course of drug and metabolite concentrations following drug administration. Thus, the quantization of factors affecting the absorption, distribution, and metabolism, and excretion of drugs will be possible. In addition, the course will discuss the pharmacokinetics of drug disposition following one compartment, two compartment and non-linear pharmacokinetic models for different routes of administration. Thus students will be able to do analysis of drug concentration data sets graphically and using non-linear regression to estimate pharmacokinetic data relevant to dose adjustment.

Prerequisite: PS 312

PS 315: Pharmaceutical Technology (3 CH)

The course comprises the knowledge of pharmaceutical plant design, quality control, machinery, the theoretical background and practical demonstration of different manufacturing processes like: heat transfer, mass transfer, particle size-analysis, mechanism of mixing, filtration, centrifugation, extraction, evaporation, drying, crystallization, emulsification and packaging technology. *Prerequisite: PS 211*

PS 322: Complementary and Alternative Medicine (2 CH)

The course is an overview of micro and macro perspectives of Complementary and Alternative Medicine which will enable the students in making rational decisions while advising patients. Two hours of lectures per week will cover the different types of complementary therapies whose safety, efficacy and toxicity may be unknown. With this knowledge the student will be enabled to make decisions and counsel patients with regard to these therapies. In addition, they will search and evaluate information on alternative medicines and make cost/benefit decisions about the use of a particular alternative medicine for a patient, supporting their decision with evidence and evaluating the validity of the evidence. They will also evaluate the use of alternative medicines in a societal context from perspectives of the health professions, biological and behavioral sciences, business and industry, practitioners, and users. *Prerequisite: PS 122*

PS 333: Interpretation of Clinical Laboratory Data (3 CH)

This course deals with the study of biochemical and hematological changes occurring in the human body under pathological conditions. Disorders in protein, lipid, and mineral metabolism as well as electrolytes, blood gases and acid base balance are assessed in view of laboratory data. Laboratory work deals with evaluation of biological constituents of blood, urine and their interpretations. *Prerequisite: PS 235*

PS 334: Pathogenic Microbiology and Antibiotics (3 CH)

The course deals with the role of microorganisms in infectious diseases. The study includes the causative agent, its general characteristics, pathogenicity, pathogenesis, laboratory diagnosis, prevention and control, and treatment of the different bacterial, viral, fungal, protozoal and helminthal infections. Members of the different classes of antibiotics will be covered with respect to mechanism of action, antimicrobial spectrum, and those less prone to microbial resistance that can be used for empirical therapy or first line therapy.

Prerequisites: PS 332; PS 231

PS 335: Bioassay and Drug Screening (1 CH)

This course is designed to give the student knowledge about the general principles of bioassay and drug screening. It also deals with methods used in the preclinical drug development. These include general methods used in the screening for a new drug and the determination of the potency using biological objects. The general methods used in the screening and bioassay of drugs on different systems of the body are covered.

Prerequisite: PS 331

PS 341: Health Care System and Pharmaceutical Care (2 CH)

This course describes the different components of health care system. It covers the evolution of health care to the present status of each healthcare profession and different departments involved in re-engineering an ideal health care system. This course also includes the roles and responsibilities of each component and how they coexist as part of the current health care system. Emphasis will be on preparing modern educated pharmacists who provide rational drug therapy to patients and apply pharmaceutical care. *Prerequisite: None*

PS 342: Drug Information and Literature Evaluation (2 CH)

This course is designed to develop the student's competency to select sources of information needed to research a question, find the potential answer, begin to evaluate the information found and ultimately formulate an appropriate response using medical terminology and abbreviations appropriately. The student will gain expertise in utilizing general as well as specialized texts and indexing systems in both print and electronic form. The student will also be able to identify the distinguishing characteristics of the medical/pharmaceutical journals discussed in class and demonstrate proficiency in preparing an abstract. The practical sessions will provide the students with first-hand experience using the various references discussed in class and in conducting computerized literature searches and evaluation.

Prerequisite: PS 331

PS 343: Community Pharmacy Training I (3 CH)

This course is the first in a two-part series of training at retail pharmacy designed to allow the student the opportunity to develop and use skills based on the knowledge acquired in

previous courses. The objectives of this initial training are to develop students' communication skills, knowledge of community pharmacy practice and to become familiar with different trade of the over-the-counter (OTC) and generic names of some drugs available in the market. In addition, students are expected to understand how to respond to commands in the different types of prescriptions. *Prerequisite: None*

Semester – 7

PS 311: Sterile Dosage Forms (3 CH)

Physicochemical properties as well as the design and formulation of ophthalmic and injectable dosage forms; including isotonicity, acid-base properties as well as sterilization principles and techniques will be studied. Basic principles of radiopharmacy and radiopharmaceuticals will also be discussed. The course also includes an introduction on sterile drug delivery systems and their advantages. *Prerequisite: PS 211*

PS 411: Clinical Pharmacokinetics and Therapeutic Drug Monitoring (3 CH)

The course is a continuation of an earlier course in Biopharmaceutics and Pharmacokinetics II (PS 314) with clinical applications. The course will discuss the pharmacokinetics of drug disposition following two compartment model, multiple dose therapy, and nonlinear pharmacokinetics model for the different routes of administration. The course also enables the student to understand how various disease states alter the pharmacokinetic parameters and how to adjust plasma concentration within therapeutic range. Concept of therapeutic monitoring will be applied on drugs with narrow therapeutic window. *Prerequisite: PS 314*

PS 414: OTC Drugs and Products (3 CH)

This course deals with the study of OTC drug treatment, and rational drug selection for common ailments by the pharmacist. The primary aim is to build background knowledge about the use of OTC drugs in retail pharmacy and to interpret this information into the actual counseling process and management. In practical sessions, students will apply the knowledge discussed in theory on real OTC cases to interpret results and give rational counseling management to patients. *Prerequisite: PS 331*

PS 445: Pharmacoeconomics (3 CH)

This course will enable students to effectively utilize the tools needed to assess the costs and outcomes of medicines and pharmaceutical care services. Students will be able to evaluate and apply health economic and humanistic outcomes research in a knowledgeable and ethical fashion at the population level. In addition, students will be to adopt medicine-focused and disease state-focused approaches to pharmacoeconomic research for the purpose of rational decision making. *Prerequisite: None*

PS 441: Communication Skills in Pharmacy Practice (2 CH)

The course emphasizes on the most important skills that enable the student to play a vital role in patient education hence improving patient understanding and compliance. This will help the students to learn the knowledge, skills and practice and will lay the foundation for clear communication and for development of a trusting relationship with the patient.

Prerequisite: None

PS 443: Clinical Pharmacy - Disease and Therapeutic Management I (3 CH)

The course places more emphasis on teaching students the knowledge, skills and competence needed to contribute effectively to the care of patients and means of how to monitor the short and long term outcomes of therapy. The course explains the responsibilities and functions of Clinical Pharmacist in the management of diseases. It emphasizes the role of clinical pharmacist in optimization of therapy, minimizing drug toxicity, maximizing drug efficacy and promoting cost-effectiveness of selected therapy. The etio-pathophysiology, symptoms and pharmacotherapy of cardiovascular, respiratory and gastro-intestinal disorders will be discussed. Case profiles will be discussed to assess the understanding of the pharmacotherapy of above mentioned disorders. *Prerequisite: PS 331*

Semester – 8

PS 446: Physical Assessment (2 CH)

This course is designed to introduce the pharmacy student to the basic principles and techniques of history taking and physical examination. Students in this course will have an opportunity to develop the skills necessary to adequately follow the patient using physical assessment parameters and to monitor drug therapy when appropriate. The student will also have an opportunity to use and demonstrate the skills learned in this class during his or her clerkship rotations. *Prerequisite: 443*

PS 415: Professional Pharmaceutical Ethics and Legislations (2 CH)

This course aims to discuss the components of the pharmaceutical legislation in the United Arab Emirates. The course will cover the law of the United Arab Emirates concerning pharmacy profession and all the pharmaceutical institutions. In addition, this course will enable students to adhere to the national and international ethical standards as they relate to the profession. *Prerequisite: None*

GE 140: Ethics and the Modern World (3 CH)

This course describes the special ethical problems and issues that arise for professional practitioners in pharmaceutical profession. The course covers the moral qualities and ethics which professionals should bring to practice to address dilemmas faced in professional

practice. The knowledge gained in the course will enable the students to safeguard and balance the interests of the professional clients and the members of the community. This course also covers the special moral problems which professionals face during professional practice in a multicultural setting. This course deals with the moral and ethical standards to be implemented in business and other professional field. *Prerequisite: None*

PS 431: Drugs of Abuse and Clinical Toxicology (3 CH)

The course covers the concepts of drug abuse, tolerance, dependence and addiction of the most widely abused narcotics and mind-manifesting drugs and means of detection and managements. In addition, the course will give an introduction to occupational and professional clinical toxicology and means of detection and managements.

Prerequisite: PS 331

PS 444: Clinical Pharmacy - Disease and Therapeutic Management II (3 CH)

This course is a continuation of PS 443 and discusses endocrine disorders, hepatic, pancreatic, autoimmune and rheumatic disorders from both disease and therapeutic management's point of view. In addition, infectious disease will be covered in the same manner. In practical, case reports / studies will be discussed to assess understanding. The course shall emphasize on teaching students the knowledge and skills needed to contribute effectively to the care of patients and to monitor the short and long term outcomes of therapy. *Prerequisite: PS 443*

PS 416: Clinical Problems in Parenteral Nutrition and Intravenous Therapy (3 CH)

This course is designed to explore the scope of clinical problems related to parenteral nutrition and intravenous therapy. Students will be taught the rationale of using various intravenous therapy and parenteral and enteral nutritional therapy with their advantages, disadvantages, complications and monitoring parameters. *Prerequisite: PS 311*

PS 447: Medication Errors: Causes, Prevention and Current Issues (2 CH)

This course is intended to provide the student with the problems of medication errors in healthcare. Activities will include discussions of significant medication error research, factors which can contribute to errors, drug categories and abbreviations associated with error risks, error detecting methods, case analysis of errors in sample prescriptions, and error prevention methods, including the roles of both the patient and technology. Students will also use the Internet to become familiar with various organizations and list services related to patient safety and to identify and make presentation on medication errors, case analysis of prescription errors, pertinent issues and current events related to this area.

Prerequisite: PS 414.

PS 448: Community Pharmacy Training II (3 CH)

Community Pharmacy II is the second in a two-part series of training at community health care setting. The student will gain an appreciation for the profession of pharmacy as practiced in the community and develop professional attitudes, judgment and skills needed to function in this setting. *Prerequisite: PS 343.*

Semester – 9

PP 542: Pathophysiology and Pharmacotherapy Course: Cardiology (2 CH)

This course provides knowledge of the principles of pathophysiologic, pharmaceutical, pharmacologic, and therapeutic considerations in the care of patients with cardiovascular diseases. Therefore, the students will be able to propose rational pharmacotherapeutic decisions and discuss relevant patient case management issues in practice. *Prerequisite: Successful completion of all the courses from semester 1 till semester 8.*

PP 543: Pathophysiology and Pharmacotherapy Course: Psychiatry and Neurology (2 CH)

This course provides knowledge of the principles of pathophysiologic, pharmaceutical, pharmacologic, and therapeutic considerations in the care of patients with psychiatric and neurological disorders. Therefore, the students will be able to propose rational pharmacotherapeutic decisions and discuss relevant patient care management issues in practice. *Prerequisite: Successful completion of all the courses from semester 1 till semester 8.*

PP 544: Pathophysiology and Pharmacotherapy Course: Gastroenterology and Nutrition (2 CH)

This course provides knowledge of the principles of pathophysiologic, pharmaceutical, pharmacologic, and therapeutic considerations in the care of patients with gastrointestinal diseases and improper nutrition. Therefore, the students will be able to propose rational pharmacotherapeutic decisions and discuss relevant patient case management issues in practice. *Prerequisite: Successful completion of all the courses from semester 1 till semester 8.*

PP 545: Pathophysiology and Pharmacotherapy Course: Renal Impairments and Drug Monitoring (2 CH)

This course provides knowledge of the principles of pathophysiologic, pharmaceutical, pharmacologic, and therapeutic considerations in the care of patients with renal diseases. In addition, emphases on the application of Clinical Pharmacokinetics in drug monitoring and dose adjustment will be done. Therefore, the students will be able to propose rational pharmacotherapeutic decisions and discuss relevant patient case management issues in practice. *Prerequisite: Successful completion of all the courses from semester 1 till semester 8.*

PP 546: Pathophysiology and Pharmacotherapy Course: Endocrinology, Rheumatology, Obstetrics and Gynecology (2 CH)

This course provides knowledge of the principles of pathophysiologic, pharmaceutical, pharmacologic, and therapeutic considerations in the care of patients with endocrinologic, rheumatologic, and obstetrics and gynecology conditions. Therefore, the student will be able to propose rational pharmacotherapeutic decisions and discuss relevant patient case management issues in practice. *Prerequisite: Successful completion of all the courses from semester 1 till semester 8.*

PP 547: Pathophysiology and Pharmacotherapy Course: Infectious Diseases and Hematology (2 CH)

This course provides knowledge of the principles of pathophysiologic, pharmaceutical, pharmacologic, and therapeutic considerations in the care of patients with infectious diseases, hematological disorders. Therefore, the students will be able to propose rational pharmacotherapeutic decisions and discuss relevant patient case management issues in practice. *Prerequisite: Successful completion of all the courses from semester 1 till semester 8.*

PP 548: Pathophysiology and Pharmacotherapy Course: Nuclear Pharmacy and Oncology (2 CH)

This course will provide the students with knowledge of the principles of carcinogenesis and cancer therapy. It will emphasize the role of clinical pharmacist in therapy optimization, minimizing drug toxicity, maximizing drug efficacy and safety. The influence of pathological characteristics, symptoms on the pharmacotherapy of neoplastic disorders will be discussed. This course also provides knowledge of the principles and techniques applicable to the preparation, handling and dispensing of radioactive pharmaceuticals and applications to Oncology. *Prerequisite: Successful completion of all the courses from semester 1 till semester 8.*

PP 549: Clinical Seminar (1 CH)

This course is designed to enhance clinical training skills in clinical specialties setup under supervision. Students in this course will have an opportunity to coordinate with health care professional, obtain medication related information, identify drug related problems, design a pharmaceutical care plan, and adequately follow the pharmacotherapy outcomes of patients. The student will be able to systematically present and discuss clinical cases relevant to courses covered in semester 9 which include Cardiology, Endocrinology, Gastroenterology, Obstetrics and Gynecology, Infectious diseases, Neurology and Psychiatry. The student will be trained to apply the knowledge, skills and competence for the enhancement of patient outcomes. Throughout the semester, the student will have an opportunity to participate in the ward rounds, participate in clinical case discussions, participate in bed side teaching and

classroom case discussions in order to professionally apply the clinical skills. *Prerequisite: Successful completion of all the courses from semester 1 till semester 8.*

Course Description: Advanced Pharmacy Practice Experience (APPE)

Advanced Pharmacy Practice Experience –APPE (35 weeks)

The primary goal of the APPE is to educate and train the student in the detection and management of medication-related problems and to assist the student in applying acquired knowledge in the promotion of rational drug therapy. The APPE will be in seven rotations (5 weeks/each training site) in Gulf Medical College Hospital and contracted hospitals community pharmacies. The APPE are designed to provide academically supervised clinical experiences, which will give the student a better knowledge of the current and most appropriate methods of collecting and applying knowledge of the therapeutic and toxic effects of drugs.

CR 542: Drug Information Rotation (5 CH)

The drug information rotation allows the student to provide drug information services to pharmacists and other healthcare professionals. Emphasis within the rotation is placed on how to receive requests for information properly, conduct a systematic information search, and assimilate the information obtained into an appropriate response form. The student will develop a working knowledge of information resources as well as develop the ability to critically evaluate such resources. The student may also have the opportunity to become involved with the evaluation of drugs for formulary inclusion, quality assurance/drug usage evaluation activities, news publications, and Pharmacy and Therapeutics (P&T) committee support. *Prerequisites: Successful completion of all courses.*

CR 543: Inpatient Hospital Pharmacy Practice Rotation (5 CH)

A clinical experience in an approved hospital pharmacy which provides experience in the provision of pharmaceutical care in an acute inpatient setting. Particular emphasis is placed on the preparation, distribution and control of medications, medication and disease monitoring, and the development of students' ability to communicate with other health care professionals. *Prerequisites: Successful completion of all courses.*

CR 544: Community Pharmacy Care Rotation (5 CH)

A structured pharmacy experience in community ambulatory practice emphasizing management and prescription dispensing functions, patient counseling, and over-the-counter medication. *Prerequisites: Successful completion of all courses.*

CR 545: Adult Acute Pharmaceutical Care Rotation (5 CH)

In this rotation, students participate in a wide range of clinical services and activities through interactions with patients, physicians and other healthcare teams. *Prerequisites: Successful completion of all courses.*

CR 651: Oncology (5 CH)

A structured pharmacy experience in an institutional setting dealing with oncology patients. *Prerequisites: Successful completion of all courses.*

CR 652: Infectious Diseases (5 CH)

A structured pharmacy experience in an institutional setting dealing with patients with infectious diseases. *Prerequisites: Successful completion of all courses.*

CR 653: Cardiology (5 CH)

A structured pharmacy experience in an institutional setting dealing with cardiology patients. *Prerequisites: Successful completion of all courses.*

CR 654: Family Medicine (5CH)

Clinical pharmaceutical health care experience in a family practice setting. *Prerequisites: Successful completion of all courses.*

CR 655: Psychiatry (5 CH)

Clinical pharmaceutical health care experience with psychiatric patients. *Prerequisites: Successful completion of all courses.*

CR 656: Pediatrics (5 CH)

This rotation is designed to provide an introduction to the pathophysiology and pharmacotherapy issues related to infants and children. The rotation will prepare the student with a knowledge base and problem-solving skills to provide pharmaceutical care to this population. The rotation will provide instruction through lectures, case-oriented group discussions with the instructor and assigned practice problems. *Prerequisites: Successful completion of all courses.*

CR 671: Pharmaceutical Industry (5 CH)

A structured pharmacy experience in an industrial pharmacy setting dealing with sales and marketing issues and manufacturing practices. *Prerequisites: Successful completion of all courses.*

CR 672: Disease State Management (5 CH)

This rotation is designed to provide an introduction to the pharmaceutical care in the outpatient treatment of one or more disease states including, but not limited to, diabetes, bronchial asthma, hypertension and dyslipidemia. *Prerequisites: Successful completion of all courses.*

CR 673: Nuclear Pharmacy (5 CH)

Clinical pharmaceutical health care experience with patients undergoing nuclear pharmacy treatments. *Prerequisites: Successful completion of all courses.*

CR 674: Consulting Pharmacy (5 CH)

Clinical pharmaceutical health care experience with a consultant pharmacist. *Prerequisites: Successful completion of all courses.*

**DOCTOR OF DENTAL
MEDICINE [DMD]**

24.0 DOCTOR OF DENTAL MEDICINE (DMD)

24.1 Overview

The Doctor of Dental Medicine (DMD) is a five-year program (10 semesters). The first two years of the curriculum are designed to educate students in biomedical and behavioral sciences. During the third and fourth year, students will concentrate on preclinical dental science courses followed by dental clinical courses providing a valuable clinical experience. The program learning outcomes are aligned to Level 7 of the NQF Emirates (National Qualifications Framework).

Comprehensive patient care is taught in the fifth year with special considerations to management of the medically compromised patients. These clinical training sessions are carried out under the strict supervision of qualified faculty members. Students who fulfill the graduation requirements and successfully demonstrate the achievement of competencies will be awarded the degree of Doctor of Dental Medicine (DMD).

24.2 Vision

The Vision of the College of Dentistry is to be nationally prominent in Dental education, research and service and merit international recognition for quality in education, research and service.

24.3 Mission

The Mission of the College of Dentistry is to educate and train the people for present as well as for future challenges so that they become useful and productive members of the oral healthcare team, thus serving the oral healthcare needs of the society in a best possible way. The College of Dentistry is committed to provide an environment of academic excellence and research and social responsibilities that facilitate the propagation and acquisition of knowledge, skills and competencies related to the profession of Dentistry and the discipline in dental education.

The DMD program aims to promote dental education and enhance dental practice through a broad spectrum of didactic instruction, simulations and clinical practice. It aims to prepare the generation of general dental practitioners with clinical competencies, possessing the knowledge, skills, and values to begin the practice of general dentistry serving UAE citizens or others at any other geographic location of their practice.

24.4 Goals and Objectives

- Provide broad based scientifically strong education in dentistry that equips the graduates to enter various areas of the profession and to adapt to changes that may occur during their professional life.
- Maintain high standards of dental education, research and services.
- Ensure that students acquire specialized theoretical and practical knowledge of dentistry, enabling them to apply their professional skills, ethically towards communities and humanity at large.
- Produce independent, competent, confident, and highly employable dentists with analytical skills for managing dental problems.
- Provide and improve health care services autonomously to patients.
- Enable graduates to self-evaluate, develop their capacity to learn and to become independent lifelong learners.
- Produce graduates who are able to communicate and deliver dental care both in community and hospital settings.
- Widen access to higher education by producing highly competent dental graduates that are capable of pursuing postgraduate studies at local and international Universities.
- Facilitate participation in the process of improving and implementing oral health care services in UAE in cooperation with public and private sectors.

24.5 Program Learning Outcomes

(A) Knowledge

On successful completion of the program, the graduate will be able to:

- A1:** Describe the scientific and molecular basis of oral and systemic diseases, the way they affect the body, oral cavity and maxillofacial region and of common oral diseases.
- A2:** Apply basic bio-behavioral and clinical science knowledge to analyze and solve problems related to the diagnosis, treatment and prevention of oral diseases.
- A3:** Associate the knowledge of oral health, scientific knowledge of dental biomaterials / dental biomechanics, clinical knowledge, new information and technology to solve common medical and dental problem.

(B) Skills

On successful completion of the program, the graduate will be able to:

- B1:** Practice comprehensive medical and dental history taking, physical examinations of head, neck and oral cavity, relevant practical procedures with modern tools and techniques for diagnosis, treatment planning and prevention.

B2: Use effective clinical, communication, IT and analytical research skills in managing dental problems.

(C) Aspects of Competence

C1: Autonomy and Responsibility

On successful completion of the program, the graduate will be able to:

C1: Demonstrate the ability to communicate thoughtfully and effectively, both verbally and in writing, showing personal attributes of compassion, honesty, as well as integrity in relation to patients, families, community and other dental professionals.

C2: Self-Development

On successful completion of the program, the graduate will be able to:

C2: Demonstrate the professionalism and to work effectively as a leader or as a part of an oral health care team with time management skills and the ability to counsel patients about their oral health problems, motivating them to adopt behaviors promoting oral and dental health.

C3: Role in Context

On successful completion of the program, the graduate will be able to:

C3: Take the responsibility for his / her self-evaluation, ethical reasoning to form the basis for a self-directed life-long engagement in the responsible & committed practice of dentistry in compliance with legal and regulatory guidelines.

24.6 Matrix of Program Learning Outcomes (PLO) aligned with QF Emirates

National Standards of Learning Outcomes for Master Program (UAENQF LEVEL 7)	Learning Outcomes of Doctor of Dental Medicine							
I. KNOWLEDGE	A1	A2	A3	B1	B2	C1	C2	C3
Specialized factual and theoretical knowledge and an understanding of the boundaries in a field of work or discipline, encompassing a broad and coherent body of knowledge and concepts, with substantive depth in the underlying principles and theoretical concepts	√							
An understanding of allied knowledge and theories in related fields of work or disciplines and in the case of professional disciplines including related regulations, standards, codes, conventions	√							
Understanding of critical approach to the creation and compilation of a systematic and coherent body of knowledge and concepts gained from a range of sources.	√	√	√					

comprehensive understanding of critical analysis, research systems and methods and evaluative problem-solving techniques		√	√					
Familiarity with sources of current and new research and knowledge with integration of concepts from outside fields		√	√					
II. SKILLS	A1	A2	A3	B1	B2	C1	C2	C3
Technical, creative and analytical skills appropriate to solving specialized problems using evidentiary and procedural based processes in predictable and new contexts that include devising and sustaining arguments associated with a field of work or discipline.				√	√			
Evaluating, selecting and applying appropriate methods, procedures or techniques in processes of investigation towards identified solutions evaluating and implementing appropriate research tools and strategies associated with the field of work or discipline.				√	√			
Highly developed advanced communication and information technology skills to present, explain and/or critique complex and unpredictable matters.				√	√			
III. ASPECTS OF COMPETENCE								
III a. Autonomy & Responsibility	A1	A2	A3	B1	B2	C1	C2	C3
Can take responsibility for developing innovative and advanced approaches to evaluating and managing complex and unpredictable work procedures and processes, resources or learning						√		
Can manage technical, supervisory or design Processes in unpredictable, unfamiliar and varying contexts						√		
Can work creatively and / or effectively as an individual, team leadership, managing contexts, across technical and or professional activities						√		
Can express an internalized personal view and accept responsibility to society at large and to socio-cultural norms and relationships						√		
III b. Role in Context	A1	A2	A3	B1	B2	C1	C2	C3
Can function with full autonomy in technical and supervisory contexts and adopt para-professional roles under guidance							√	
Can take responsibility for the setting and achievement of group or individual outcomes and for the supervision of the work of others or self in the case of a specialization in field of work or discipline.							√	
Can participate in peer relationships with qualified practitioners and lead multiple groups							√	

Can take responsibility for managing the professional development and direct mentoring of individuals and groups							√	
III c. Self-Development	A1	A2	A3	B1	B2	C1	C2	C3
Can self-evaluate and take responsibility for contributing to professional practice regular professional development and/ or further learning can manage learning								√
Can manage learning tasks independently and professionally in complex and sometimes unfamiliar learning contexts								√
Can contribute to and observe ethical standards								√

24.7 Program Learning Outcomes aligned with each course

Course Code	Course Title	Program Learning Outcomes							
		A1	A2	A3	B1	B2	C1	C2	C3
ENG 101	English Language	P			F	F	F	F	F
ITE 101	Information Technology				P	F	P	P	
ICU 101	Islamic Culture		P			P	F		F
ANA 101	Anatomy I	F	F	P	F	P	F	P	P
HIS 101	Histology	F	F	F	P	F	P	P	
CHM 101	Chemistry	P	P	P	P	P	P	P	P
PHY 102	Physics			P	P			P	P
BSC 102	Behavioral Sciences	P	F	P	P	P	P	P	F
ANA 102	Anatomy for Dental Students	F	F		F	F	F	F	
DAN 102	Dental Anatomy and Occlusion	F	F	F	F	F	F	P	P
HPH 102	Human Physiology	F	F	F	F	F	P	P	P
BIO102	Biochemistry	P	P	P	P	P	P	P	P
MIC 201	Microbiology and Immunology	P	P	P	P	P	P	P	P
BIS 201	Biostatistics	P	P	P		P	P	P	P
OHI 201	Oral Histology	P	P	P	P	P	P	P	P
GPA 201	General Pathology	F	F	F	F	F	F	F	F
PHA 201	Pharmacology		F		P		P	P	P
POC 201	Principles of Occlusion	F	F	F	F	F		F	F
DMA 202	DENTAL MATERIALS	P	P	P	P	P	F	F	P
GMD 202	General Medicine	P	P	P					
GSR 202	General Surgery & ENT		P	P	P			P	
ORD 202	Oral Radiology I (Pre- Clinical)	F	F	F	F	F	P	P	P
OPA 202	Oral pathology I	F		P	P		P		
ETH 202	Ethical & Medico-legal Aspects of Dentistry	F	F	F	F	F	F	F	F
OPA 301	Oral Pathology II	P	P	P	P			P	
OPD 301	Operative Dentistry I	P	P	P	P		P	P	P
RPR 301	Removable Prosthodontics I	P	F	F	F	P		F	F
ORT 301	Orthodontics I	P	P	F	P	P	P	P	F
FPR 301	Fixed Prosthodontics I	P	F	F	F	P		F	F
END 301	Endodontics I (Pre-clinical)	F	F	P	F	F	P	F	P
OSR 302	Oral Surgery I	F	F	F	F	F	F	F	F
OPD 302	Operative Dentistry II	P	P	P	P		P	P	P
END 302	Endodontics II		P	F	P		P		P
FPR 302	Fixed Prosthodontics II (Pre-clinical)	P	P	P	P	P	P	P	P
RPR 302	Removable Prosthodontics II (Pre-clinical)	P	F	F	F	F		F	F

PER 302	Periodontics I (Pre- Clinical)	F	F	F	P	P	P	P	P
ORT 302	Orthodontics II	P	P	F	P	P	P	P	F
LAN 302	Local Anaesthesia	F	F		F	F	F	F	F
CDE 302	Community Dentistry I	F	F	F	F	F	F	F	F
OPD 401	Operative (Esthetic) Dentistry III	P	P	P	P	P	P	P	P
END 401	Endodontics III	P	P	F	F	F	P	F	F
FPR 401	Fixed Prosthodontics III	P			F	F	P		F
RPR 401	Removable Prosthodontics III	F	F	F	P	P	P	P	F
PER 401	Periodontics II	F	F	F	F	P	F	P	P
OSR 401	Oral Surgery II	F			F	F	F	F	F
ODG 401	Oral Diagnosis	P	P	F	F	F	P	P	P
PDN 401	Preventive Dentistry	P			P	P	P	P	P
ORT 401	Orthodontics III	P	F	F	F	F	F	F	P
ORD 401	Oral Radiology II	F	F	F	F	F	P	P	P
END 402	Endodontics IV (Clinical)	P		F	F	F		F	F
PER 402	Periodontics III (Clinical)	F	F	F	F	P	F	P	P
OSR 402	Oral Surgery III	F	P		F	F	F	F	F
RPR 402	Removable Prosthodontics IV (Clinical)	P	P	P	P	P	P	P	P
OPD 402	Operative Dentistry IV (Clinical)	P	P	P	P	P	P	P	P
FPR 402	Fixed Prosthodontics IV (Clinical)	P	P	P	P	P	P	P	P
ORT 402	Orthodontics IV	P	F	F	F	F	F	F	P
OME 402	Oral medicine	F	F	F	F	F	P	F	F
RME 402	Research Methodology	P	P	P	P	P	P	P	P
PDG 501	Principles of Differential Diagnosis	P	P	F	F	F	P	P	F
COC 501	Clinical Occlusion	F			F		F	F	F
PER 501	Periodontics	F	F	F	F	F	F	F	F
PED 501	Pediatric Dentistry I	P	F	F	F	P	F	P	P
MCP 501	Medically Compromised Patients	P	P	F	F	F	P	P	F
DPM 501	Dental Practice Management	F			F	F	F	F	F
HDT 501	Hospital Dentistry	F			F	F	F	F	F
CDE 501	Community Dentistry II				P	P	P	P	P
CDC 502	Comprehensive Dental Clinic (Clinical)	F	F	F	F	F	F	F	F
PER 502	Periodontics V (Clinical)	F	F	F	F	P	F	P	P
PED 502	Pediatric Dentistry II (Clinical)	F	F	F	F	P	P	P	P
IMP 502	Implantology (Clinical)	F	F	F	F	F	F	F	F
MEM 502	Medical Emergencies (Clinical)	F	F	F	F	F	P	P	P
GER 502	Geriatric Dentistry	P	F	F	F	F	P	P	F
ADV 502	Advanced Diagnosis, Oral Medicine, Pathology and Radiology (Clinical)	P	P	F	F	F	P	P	F
CDE 502	Community Dentistry III	F	F	F	F	F	F	F	F
SEM 502	Seminars	F		F	F	F	F	P	P

24.8 Program Structure

The DMD is a bachelor program consists of five-year duration spanning over 10 semesters.

The first two years of the curriculum are designed to educate students in the biomedical and behavioral sciences. During the third and fourth year, students will concentrate on preclinical dental sciences courses followed by clinical dental courses providing a valuable clinical experience. Comprehensive patient care is taught in the fifth year with special consideration to management of the medically compromised patients.

Students who fulfill the graduation requirements and have successfully demonstrated the achievement of all competencies will be awarded the degree of Doctor of Dental Medicine (DMD).

The program consists of 190 Credit Hours

Courses	Credit Hours
General Education	25
Basic Medical Sciences	37
Basic Dental Sciences	26
Pre-clinical	42
Clinical	60
TOTAL	190

24.9 Plan of Study

Semester – 1

Course Code	Course Title	C H	L H	NLH	Prerequisite(s)
ENG 101	English Language (General Education)	3	3	0	None
ITE 101	Information Technology (General Education)	3	2	2	None
ICU 101	Islamic Culture (General Education)	3	3	0	None
ANA 101	Anatomy I (Basic Medical Sciences)	3	2	2	None
HIS 101	Histology (Basic Medical Sciences)	3	2	2	None
CHM 101	Chemistry (General Education)	4	3	2	None
	TOTAL	19			

Semester – 2

Course Code	Course Title	C H	L H	NLH	Prerequisite(s)
PHY 102	Physics (General Education)	3	3	0	None
BSC 102	Behavioral Sciences (General Education)	3	3	0	None
ANA 102	Anatomy II: Head & Neck (Basic Medical Sciences)	4	3	2	ANA 101

DAN 102	Dental Anatomy and Occlusion (Basic Dental Sciences)	3	2	2	ANA 101
HPH 102	Human Physiology (Basic Medical Sciences)	4	3	2	None
BIO 102	Biochemistry (Basic Medical Sciences)	4	3	2	CHM 101
TOTAL		21			

Semester - 3

Course Code	Course Title	C H	L H	NLH	Prerequisite(s)
MIC 201	Microbiology & Immunology (Basic Medical Sciences)	4	3	2	None
BIS 201	Biostatistics (General Education)	3	2	2	None
OHI 201	Oral Histology (Basic Dental Sciences)	3	2	2	HIS 101
GPA 201	General Pathology (Basic Medical Sciences)	3	2	2	HIS 101
PHA 201	Pharmacology (Basic Medical Sciences)	4	3	2	HPH 102
POC 201	Principles of Occlusion (Pre-clinical)	2	1	2	DAN 102
TOTAL		19			

Semester - 4

Course Code	Course Title	C H	L H	NLH	Prerequisite(s)
DMA 202	Dental Materials (Basic Dental Sciences)	3	2	2	None
GMD 202	General Medicine (Basic Medical Sciences)	3	2	2	MIC 201, GPA 201
GSR 202	General Surgery & ENT (Basic Medical Sciences)	3	2	2	ANA 102
ORD 202	Oral Radiology I (Pre-clinical)	2	1	2	ANA 102
OPA 202	Oral Pathology I (Basic Dental Sciences)	3	2	2	GPA 201, OHI 201
ETH 202	Ethical & Medico-legal Aspects of Dentistry (Basic Medical Sciences)	2	2	0	None
TOTAL		16			

Semester – 5

Course Code	Course Title	C H	L H	NLH	Prerequisite(s)
OPA 301	Oral Pathology II (Basic Dental Sciences)	3	2	2	OPA 202
OPD 301	Operative Dentistry I (Pre-clinical)	3	2	3	DMA 202, DAN 102
RPR 301	Removable Prosthodontics I (Pre-clinical)	3	2	3	DMA 202, DAN 102
ORT 301	Orthodontics I (Pre-clinical)	2	1	3	DAN 102, POC 201

FPR 301	Fixed Prosthodontics I (Pre-clinical)	3	2	3	DAN 102, DMA 202
END 301	Endodontics I (Pre-clinical)	3	2	3	DAN 102, DMA 202
RME 301	Research Methodology (General Education)	3	2	1	BIS 201
TOTAL		20			

Semester – 6

Course Code	Course Title	C H	L H	NLH	Prerequisite(s)
OSR 302	Oral Surgery I (Pre-clinical)	3	2	2	MIC 201, PHA 201
OPD 302	Operative Dentistry II (Pre-clinical)	3	2	3	OPD 301
END 302	Endodontics II (Pre-clinical)	3	2	3	END 301
FPR 302	Fixed Prosthodontics II (Pre-clinical)	3	2	3	FPR 301
RPR 302	Removable Prosthodontics II (Pre-clinical)	3	2	3	RPR 301
PER 302	Periodontics I (Pre-clinical)	2	1	2	OHI 201
ORT 302	Orthodontics II (Pre-clinical)	2	1	3	ORT 301
LAN 302	Local Anesthesia (Pre-clinical)	1	1	0	ANA 102, HPH 102
CDE 302	Community Dentistry I (Basic Dental Sciences)	1	1	0	None
SEM 302	Seminars (Basic Dental Sciences)	2	2	0	RME 301
TOTAL		23			

Semester – 7

Course Code	Course Title	C H	L H	NLH	Prerequisite(s)
OPD 401	Operative (Esthetic) Dentistry-III (Clinical)	2	1	3	All Previous Courses
END 401	Endodontics III (Clinical)	2	1	3	All Previous Courses
FPR 401	Fixed Prosthodontics III (Clinical)	2	1	3	All Previous Courses
RPR 401	Removable Prosthodontics III (Clinical)	2	1	3	All Previous Courses
PER 401	Periodontics II (Pre-Clinical)	2	1	3	All Previous Courses
OSR 401	Oral Surgery II (Clinical)	2	1	3	All Previous Courses

ODG 401	Oral Diagnosis (Clinical)	3	2	3	All Previous Courses
PDN 401	Preventive Dentistry (Pre-clinical)	3	2	2	All Previous Courses
ORT 401	Orthodontics III (Clinical)	2	1	3	All Previous Courses
ORD 401	Oral Radiology II (Clinical)	2	1	3	All Previous Courses
TOTAL		22			

Semester – 8

Course Code	Course Title	C H	L H	NLH	Prerequisite(s)
END 402	Endodontics IV (Clinical)	2	1	3	END 401
PER 402	Periodontics III (Clinical)	2	1	3	PER 401
OSR 402	Oral Surgery III (Clinical)	2	1	3	OSR 401
RPR 402	Removable Prosthodontics IV (Clinical)	2	1	3	RPR 401
OPD 402	Operative Dentistry IV (Clinical)	2	1	3	OPD 401
FPR 402	Fixed Prosthodontics IV (Clinical)	2	1	3	FPR 401
ORT 402	Orthodontics IV (Clinical)	2	1	3	ORT 401
OME 402	Oral Medicine (Clinical)	3	2	3	GMD 202
TOTAL		17			

Semester – 9

Course Code	Course Title	C H	L H	NLH	Prerequisite(s)
PDG 501	Principles of Differential Diagnosis (Clinical)	2	1	1	All Previous Clinical Courses
COC 501	Clinical Occlusion (Clinical)	2	1	3	POC 201
PER 501	Periodontics IV (Clinical)	2	1	3	PER 402
PED 501	Pediatric Dentistry I (Clinical)	3	2	3	All Previous Clinical Courses
MCP 501	Medically Compromised Patients (Basic Dental Sciences)	1	1	0	All Previous Clinical Courses
DPM 501	Dental Practice Management (Basic Dental Sciences)	3	3	0	None
HDT 501	Hospital Dentistry (Clinical)	2	1	3	All Previous Clinical Courses
CDE 501	Community Dentistry II (Basic Dental Sciences)	1	1	0	None
TOTAL		16			

Semester – 10

Course Code	Course Title	C H	L H	NLH	Prerequisite(s)
CDC 502	Comprehensive Dental Clinic (Clinical)	3	2	4	All Previous Clinical Courses
PER 502	Periodontics V (Clinical)	2	1	3	PER 501
PED 502	Pediatric Dentistry II (Clinical)	3	2	3	PED 501
IMP 502	Implantology (Clinical)	2	1	1	All Previous Clinical Courses
MEM 502	Medical Emergencies (Clinical)	2	1	3	All Previous Clinical Courses
GER 502	Geriatrics Dentistry (Basic Dental Sciences)	1	1	0	All Previous Clinical Courses
ADV 502	Advanced Diagnosis, Oral Medicine, Pathology and Radiology (Clinical)	2	1	3	All Previous Clinical Courses
CDE 502	Community Dentistry III (Basic Dental Sciences)	2	2	0	None
TOTAL		17			

C H – Credit Hour, L H – Lecture Hour, NLH – Non Lecture Hour

24.10 Course Description**Semester - 1****ITE 101: Information Technology (3 Cr)**

This course provides knowledge, skills and competencies of relevant software applications, which help the students to improve their professional competence. Students will learn the concepts of computer hardware and software and become familiar with a variety of computer applications, including word processing, multimedia presentations, spreadsheets, databases and HIMS. Students will also investigate internet-based applications, working with email and learning how to browse the web. Coursework also include activities that explore social and ethical issues related to computers. *Prerequisite: Nil*

ANA 101: Anatomy – I (3 Cr)

The Human Anatomy course covers the skeleton including the skull, vertebral column, upper limbs, lower limbs and thorax with accent on the development of nose, lips, oral cavity, cranium, salivary glands and pharynx. It also includes information about the viscera of the thorax and abdomen with their blood and nerve supply. The course also gives information about human embryology: the gametogenesis, fertilization and the embryological development of the face, nose, lips, oral cavity, jaws, brachial arches and their derivatives, cranium, vertebrae, temporomandibular joint, teeth, salivary glands, pituitary gland, pharynx,

respiratory tract and blood vessels of the head and neck. The use of computer software is vital in teaching this course. *Prerequisite: Nil*

CHM 101: Chemistry (4 Cr)

This course provides in depth understanding of the structure and properties of atom, periodic table, molecules, ionic and covalent compounds. It also provides comprehension of the states of matter and their properties; mixtures, suspensions, colloidal state, solutions, diffusion and osmosis. Knowledge of Hydrogen ion concentration (pH), acids, bases and salts; chemical and biological buffers in relation to homeostasis is also provided. The course will also focus on titration, oxidation-reduction reactions, thermodynamics including rate of reaction and energy changes. Chemical bonds and reactions of inorganic and organic compounds including the structure-function relationships of biomolecules (proteins, carbohydrates, lipids and nucleic acid) is one of the main focus areas of this course. It also covers the chemical and biochemical calculations. Laboratory sessions help in understanding the properties of buffers and chemical reactions of organic compounds including biomolecules. The course provides the student with the knowledge of Chemistry preparing him/her to comprehend further dentistry courses especially Biochemistry. *Prerequisite: Nil*

ICU 101: Islamic Culture (3 Cr)

The course aims to introduce the learner to the concepts and beliefs in Islam that form the basics of Islamic culture. The students are expected to identify the differences, compare values and preferences in Islamic culture with the existing ones. The course consists of a general review of Islam as a religion and as an approach to life. The objective of this course is to enable the student to demonstrate awareness of the effects of culture upon interpersonal communications and to interact appropriately to the culture of the colleague/patient/client. *Prerequisite: Nil*

ENG 101: English Language (3 Cr)

Intensive instruction in writing process focuses on organization of ideas in well-developed expository and argumentative essays with some emphasis on developing vocabulary. *Prerequisite: Nil*

HIS 101: Histology (3 Cr)

This course covers the ultramicroscopic structure of the cell, epithelium, connective tissues, bone, cartilage, muscles, blood vessels and lymphatic tissues. It also covers the microscopic structure of the alimentary canal, liver, gall bladder, pancreas, reproductive system, eye (cornea and retina), skin, respiratory system, urinary system, nervous system, endocrine glands (pituitary, thyroid, parathyroid and suprarenal gland). The use of computer software is fundamental in teaching this course. *Prerequisite: Nil*

Semester - 2

PHY 102: Physics (3 Cr)

This course in Physics provides knowledge of mechanics, heat and thermodynamics, electricity and its effects, properties of solids and fluids, vibrations and wave motion. The topics in Physics like magnetism, optics, sound and nuclear physics which have relevance in Dentistry will also be covered. The course helps the students to understand the principle of working of biomedical instruments which is included in other courses and also the safety measures to be followed while working with electrical instruments. *Prerequisite: Nil*

BSC 102: Behavioral Sciences (3 Cr)

An overview of the main topics in general psychology includes biological basis of behavior and mental processes: sensation and perception: learning: motivation: intelligence, human development: personality and behavioral disorders. *Prerequisite: Nil*

DAN 102: Dental Anatomy and Occlusion (3 Cr)

This course provides an introduction to dental anatomy, terminology, dental formulas, dental notation systems; a detailed description of the chronology and morphology of each tooth, anatomical variations and teeth anomalies, dental arches alignment, an introduction to occlusion as well as forensic dentistry. The use of computer software is fundamental in teaching human dental anatomy. The laboratory part will comprise anatomical wax carving of teeth. This course is fundamental for students to give information on comparative anatomy of teeth with their anatomical abnormalities. It helps in understanding the clinical and surgical dentistry. *Prerequisite: ANA 101*

BIO 102: Biochemistry (4 Cr)

This course provides knowledge of properties and mechanism of action of enzymes and coenzymes, factors affecting enzyme activity (pH & temperature), different types of enzyme inhibitions and regulations, isoenzymes and diagnostic enzymology. It also covers the biochemical reactions and metabolism of carbohydrates, lipids and proteins. Moreover, it provides knowledge on functions, sources and deficiency symptoms of minerals, vitamins and macronutrients relevant to clinical dentistry and nutritional counseling. Biochemistry of saliva and sugar metabolism in relation to enamel, dentine, dental plaque and caries process has also been included. The topics of nucleotide (DNA & RNA) metabolism, DNA replication and repair, RNA and protein synthesis, and DNA based techniques are also covered. Laboratory sessions help in understanding the principles and importance of estimation of blood calcium, phosphate, glucose, lipids and proteins. The course also focuses on the principles and interpretation of restriction fragment length polymorphism using restriction enzymes and probes. The course provides the student with the knowledge of Biochemistry preparing him/her to comprehend other courses of dentistry. *Prerequisite: CHM 101*

ANA 102: Anatomy II: Head and Neck (4 Cr)

This course covers the exhaustive anatomy of the head (including the mandible) and neck regarding bones, and soft parts. The bony parts will comprise the anatomy of skull and cranium, jaws, parietal, frontal, sphenoid, ethmoid, vomer, nasal, zygomatic, temporal, lacrymal bones and nasal conchae. The soft parts cover the scalp and temple (muscles, vessels and nerves), anterior and posterior triangles, sub-occipital triangle, muscles, vessels and fascia of the neck, face and facial muscles, nose, ear and eye, pharynx and larynx, deep dissection of neck, thyroid, parathyroid, brain, cranial nerves, spinal cord and meninges, muscles of mastication, temporal and submandibular region, the parotid, sublingual and submandibular salivary glands. The use of computer software is fundamental in teaching the course of head and neck anatomy. *Prerequisite: ANA 101*

HPH 102: Human Physiology (4 Cr)

This course helps the students in identifying the functions of different organs of the body. It provides information on cell physiology; extra cellular fluid, homeostasis, transport across the cell membrane, blood gases, and acid–base physiological aspects. Also it covers blood and its constituents, hemorrhage and coagulation. It describes haemodynamics, physiologic properties of the cardiac muscle, ECG, cardiac output, blood pressure, heart rate, vasomotor center, shock and special circulation. In addition, it covers physiology of respiratory, excretory systems, endocrine system, reproductive system, GIT as well as CNS. This course also provides information on the influence of diet on oral structures as well as the effect of hormones on oral tissues and saliva. *Prerequisite: Nil*

Semester - 3

BIS 201: Biostatistics (3 Cr)

This course introduces the dental student to the principles of basic Statistics and basics of clinical trial design and analysis. Systematic critical appraisal of the design, analysis and outcomes from these trials form the basis for conclusions on effectiveness of different treatment modalities. This provides the evidence base for developing guidelines in clinical care. Research continues to be essential to develop a clearer understanding of approaches. The principle of health care economics provides the framework for understanding how choice between treatments can be made. This course is intended to cover the previously mentioned principles to enable the student to be acquainted with clinical trials especially evidence based Dentistry. *Prerequisite: Nil*

GPA 201: General Pathology (3 Cr)

This course follows the fundamental courses in anatomy, histology and physiology that lay down the basics of normal structure and functions of the human body to next build the concepts of the pathologic basis of diseases. This course provides students a thorough

scientific knowledge and understanding of the general principles of pathology, causes of disease, cellular responses to stress and noxious stimuli, inflammatory reactions, tissue response to infection, wound healing, regeneration and repair, hemodynamic disorders, neoplasia, genetic disorders, disease of the immune system, Infectious diseases, environmental and nutritional diseases. This course is useful in understanding the etiology, pathogenesis, morphological features and diagnosis of diseases that affect different organs of the body and oral cavity. *Prerequisite: HIS 101*

MIC 201: Microbiology and Immunology (4 Cr)

This course provides knowledge on the fundamental characteristics of microorganisms, with special emphasis on sterilization and disinfection, infection control, oral microbial flora, staphylococci, bacilli, spirochetes, actinomyces, viruses, common parasites, vaccines and sera, pyaemia, bacteraemia, septicemia, focal and systemic infections. This course helps in understanding the etiology, pathogenesis, diagnosis, prevention and treatment of various infectious diseases. It also includes information on the basics of oral virology and mycology as well as oral microbial pathogens. The practical part will cover gram staining and acid fast staining. It also covers doctrine of immunology and immunological responses, immunotherapy, immunosuppressants, autoimmune diseases, organ and tissue transplantation, and vaccines. *Prerequisite: Nil*

OHI 201: Oral Histology (3 Cr)

This course covers growth and development of face, teeth and jaws, enamel, dentin, cementum, pulp and periodontal membrane; the microscopic and ultramicroscopic structure of dental tissues; enamel, dentin, cementum, pulp, periodontal membrane and bone. Also it covers the microscopic study of the neighboring structures of the oral cavity; lips, tongue, floor of the mouth, palate, salivary glands of the oral cavity and alveolar bone with accent on calcification of the hard tissues of the teeth and alveolar bone; shedding and eruption of teeth, temporomandibular joint and age changes in teeth and surrounding structure. The use of computer software is fundamental in teaching of oral histology. *Prerequisite: HIS 101*

PHA 201: Pharmacology (4 Cr)

This course covers information on universal principles of pharmacology, with special accent on dental therapeutics, pharmacokinetics related to general dentistry, ADME of drugs, drug receptors pharmacodynamics, dosage forms and routes of drug administrations, adverse drug reactions, drugs acting on CNS and peripheral nervous system, anti-infective drugs, cardiovascular system, hemopoetic system, endocrine system, gastrointestinal tract, respiratory system and immune system, hormones, vitamins, miscellaneous agents (astringents, bleaching, dentifrices and mouth washes, disclosing solutions, styptics), prescription writing and compliance to medication. Also, it allows the student to compare

and determine the trends of use of complementary and alternative medicine. This information assist the students in drugs and their dosage form, doses, dose regimens, duration of use, precautions and contraindications. Also it provides the students information on proper dealing with prescription and information given to patients to ensure their compliance to medication. *Prerequisite: HPH 102*

POC 201: Principles of Occlusion (2 Cr)

This is an essential course built upon Anatomy and Physiology. This course covers dental terminology, normal anatomy and physiology of masticatory system, occlusal form and function in relation to neighboring and opposing teeth, the periodontium, the temporomandibular joints, the masticatory muscles and the neuromuscular system, in addition to, the functions of mastication, respiration, swallowing and speech. These information help students in understanding relevant diseases and their proper management. Its main rationale is to give preliminary information needed to diagnose and manage malocclusion. *Prerequisite: DAN 102*

Semester – 4

DMA 202: Dental Materials (3 Cr)

This course offers structure, terminology, composition, manipulation, physical properties, biocompatibility, dental uses of dental materials including gypsum products, impression materials (hydrocolloids and rubber base), resins, waxes, restorative materials, cements, cavity liners, varnishes, amalgam, casting metals and alloys, ceramics, and implant materials with practical applications. It also covers procedures of tooth cuttings, burs and points, abrasive and polishing agents. This is an essential course to provide information on the aims, scope of science, types, uses, and limitations characters of dental materials to the students. This course helps students in differentiation between dental materials and selection of the most appropriate ones. Also, it helps in providing information on compatibility of these agents. It offers the vital skills for manipulation and mixing of dental materials to the students. Thus, they will gain the skills vital for filling, welding, soldering, annealing, picking, investing, and casting procedures needed in the relevant courses. *Prerequisite: Nil*

OPA 202: Oral Pathology I (3 Cr)

This course is important for completing with Anatomy, Histology and Physiology a combined series for providing a complete idea on pathophysiology to understand pharmacotherapy and to carry out treatment planning on scientific backgrounds. This course covers the developmental disturbances of dental oral and para-oral structures including hereditary disorders, lesions of oral and para-oral structures, dental caries, pulpal and periapicalpathosis, defense mechanism of oral tissues and healing following injuries,

infectious diseases of oral mucosa including HIV/AIDS related lesions. Emphasis is placed on demonstration that helps understanding diseases and therapy in a proper way.

Prerequisite: GPA 201, OHI 201

ETH 202: Ethical & Medico-legal Aspects of Dentistry

This course is intended to provide an overview of the ethical and legal obligations of dental practitioners. It is intended to provide an overview of the ethical and legal obligations of dental practitioners. It is primarily concerned with the principles and standards of professional conduct and ethical behavior that apply to all dental practitioners.

Prerequisite: Nil

GSR 202: General Surgery and ENT (3 Cr)

This course includes an introduction to general surgery covering information about introduction, injuries, basic and advanced life support, fluid and electrolyte balance, hemorrhage, shock, wound infections and wound healing. Knowledge of these subject areas is kernel to the provision of satisfactory dental treatment and advice to patients undergoing dental treatment. The course is intended to provide students with sufficient knowledge to recognize problems in the surgical history of patients about to go under dental treatment and to take the appropriate action to provide a quality care. An important aspect is to ensure that graduate practitioners understand when referral of complex treatment is indicated.

Prerequisite: ANA 102

ORD 202: Oral Radiology I (2 Cr)

Oral Radiology is the dentistry concerned with the use of X-ray for the diagnosis of oral diseases. It encompasses biophysics, anatomy of head and neck, the instrumentation, and the interpretation of results. Oral radiology is of utmost importance for the diagnosis of diseases in dental practice. This course is designed to offer the fundamentals of radiology, hygienic fundamentals, radiation history, physics, biological considerations and techniques of radiography, radiographic machine operation. It also includes normal anatomical land marks of the jaws, the use of intra- and extra-oral radiographic techniques. This information helps students in performing radiological investigations, assessing the risks of radiation and the benefits of radiographic procedures. Also, it allows the student to select, take and process the most appropriate radiography. This course covers demonstrations for parallel technique; intra-oral and panorama radiographs in addition to X-ray machine operations, and hand developing of X-ray film will be given. *Prerequisite: ANA 102.*

GMD 202: General Medicine (3 Cr)

This course covers definite diseases of the gastro intestinal system, liver, cardiovascular system, respiratory system, renal system, skin, hematology, CNS, in addition to nutritional,

metabolic, endocrine disorders, infections and oncology. This is a fundamental course for a dentist as it covers the most important human diseases specially those of intimate relation to dentistry. Knowledge on etiology, pathophysiology, diagnosis, and treatment of these diseases is required for a dentist to help him/her in consultation with other health care professionals in clinical, laboratory or diagnostic procedures necessary for proper treatment of such diseases. Also, he/ she must be familiar with the implications of systemic diseases on dental diseases. This information helps students in proper management of dental diseases.

Prerequisite: MIC 201, GPA 201

Semester - 5

OPD 301: Operative Dentistry I (3 Cr)

This is a basic course in a series of Restorative Dentistry. It offers information on biomechanical principles of cavity design and preparation as related to tooth morphology. This information is so important for the student to manage the different clinical situations regarding teeth restoration. Also, it offers information and skills required for patient management, diagnosis for cases which need restorative dentistry and the selection of the most appropriate materials used in restorative dentistry. *Prerequisite: DMA 202, DAN 102*

FPR 301: Fixed Prosthodontics I (3 Cr)

This course is the first in a series of courses on Fixed Prosthodontics. It covers taking records that are required for use in the laboratory fabrication of dental prostheses and appliances. This course provides the students with the fundamentals of fixed Prosthodontics including terminology, basic knowledge, diagnosis, biomechanical principles and construction of fixed prosthodontics restorations. It includes the design and fabrication techniques encountered in the construction of a single extra coronal tooth and porcelain fused to metal PFM restorations as well as a three unit anterior and posterior fixed partial denture. The course comprises necessary knowledge of dental materials for the respective technical purpose. Also, design dental prostheses, write a laboratory work authorization, and evaluate laboratory prostheses and appliances. It provides the principles and techniques required for the preparation of teeth, and fabrication of casting. This course includes practical work which helps students in the preceding clinical courses. *Prerequisite: DAN 102, DMA 202*

END 301: Endodontics I (3 Cr)

This is the first course in a series of courses on Endodontics. It offers an introduction to the fundamentals of endodontics, patients who need surgical endodontics; extraction, and preparation of the patient for extraction. This course provides the basic biological and mechanical concepts of endodontics. It covers the biology of pulp, etiology of pulp pathology with their signs and symptoms, radiographic interpretation of different pulp and

Periapical conditions as well as the fundamentals of root canal treatment. In the laboratory the student will perform endodontic treatment on numerous acrylic and natural teeth, both hand held and mounted in blocks and dentoform. Practical work in this course helps in preceding clinical courses. *Prerequisite: DAN 102, DMA 202*

RME 301: Research Methodology (3 Cr)

This course is designed to cover general principles of research methodology. This course provides knowledge to the students to use and evaluate research methodologies. Students will be able to evaluate the appropriateness of research methodologies designed to answer a research question or to test a hypothesis, select an appropriate statistical test, analyze the data, explain and evaluate the obtained results and apply the results to decisions about research and practice. It introduces the issues and practice of critical appraisal and research methodology aiming to present the conceptual foundations and an understanding of the purposes of research methodology and critical appraisal. It will develop the ability of students to apply the principles of research to understand published research literature, formulate research proposals and undertake research. Students will be involved in research by carrying out research course work in course SEM 302. *Prerequisite: BIS 201*

OPA 301: Oral Pathology II (3 Cr)

This course is a continuation of the Oral Pathology I course. It provides information about bone disorders affecting jaws, cysts and neoplasms of the oral cavity, diseases of salivary glands, temporomandibular joints, nerves, skin, blood and their implications on oral tissues; and effects of radiation on oral and para-oral tissues. Emphasis is placed on demonstration of microscopic sections in the laboratory that helps understanding and management of oral and para-oral conditions. *Prerequisite: OPA 202*

ORT 301: Orthodontics I (2 Cr)

This is the first in a series of four courses on orthodontics. This course is the introduction to orthodontics to provide students with basic knowledge for identifying existing and developing problems associated with dental and skeletal malocclusion, manipulation of orthodontic wires and acrylics, process of soldering and welding, the most appropriate wire for malocclusion with practical applications and demonstrations. Practical work helps in offering experience needed for the subsequent clinical courses. *Prerequisite: DAN 102, POC 201*

RPR 301: Removable Prosthodontics I (3 Cr)

This course is the base for a series of courses on Removable Prosthodontics. It provides students with necessary information on management of patients who lost their natural teeth. This information is accompanied with practical work to give basis for clinical application in the preceding relevant courses. This course covers restoration of function,

facial appearance, maintenance of facial appearance, and maintenance of oral health for patients who lost their natural teeth. It provides the student with basic knowledge and terminology, theory, understanding and technical proficiency in construction of different types of complete dentures, with emphasis on indications and contraindications, denture design and laboratory skills. Practical work includes laboratory procedures associated with denture construction. The course comprises necessary knowledge of dental materials for the respective technical purpose. *Prerequisite: DMA 202, DAN 102*

Semester - 6

OPD 302: Operative Dentistry II (3 Cr)

This course is the second course in a series of courses to give students knowledge and Pre-Clinical experience in restorative transversal and material laboratory. It provides the students with continued information regarding diagnosis and treatment of patients with emphasis on management of defective restorations under the supervision of faculty members. The student participates in the selection of the most appropriate restorative material and in the execution of basic operative dental treatment. This experience improves their confidence so as to be ready for the preceding clinical courses. *Prerequisite: OPD 301*

FPR 302: Fixed Prosthodontics II (3 Cr)

This is the second course in the series of fixed partial denture in which the students are provided with more information on restoration of compromised teeth, crowns, fixed partial denture, and operative dentistry. The students start preclinical fixed partial denture to be ready for the preceding clinical courses. It continues with knowledge on proper patient examination, evaluation and treatment plan with emphasis on diagnostic considerations, preliminary therapy and treatment sequencing and execution of fundamental procedural techniques. *Prerequisite: FPR 301*

RPR 302: Removable Prosthodontics II (3 Cr)

This course is a continuation of the Removable Prosthodontics I. It continues with knowledge on proper patient examination, evaluation and treatment plan with emphasis on partial denture diagnosis and treatment planning, basic principles of partial denture design, fabrication, function and repair. Practical work includes fabrication of removable partial dentures. *Prerequisite: RPR 301*

PRE 302: Periodontics I (2 Cr)

Periodontics is the branch of dentistry dealing with gingival, periodontal and other related disease of the periodontium. Periodontics courses are designed to provide didactic, and experiences in the prevention of oral diseases and management of periodontal disorders.

During this pre-clinical course, the student can adequately develop knowledge and understand etiology of different periodontal conditions and develop the skills of using manual periodontal instruments. *Prerequisite: OHI 201*

ORT 302: Orthodontics II (2 Cr)

This is the second course in the series of Orthodontic courses providing the students with more experience about orthodontics. It provides knowledge on the evaluation, prevention and treatment planning for the common cases encountered by the general practitioner. It also covers the biomechanical principles and the selection of the most proper appliances. The practical skills gained in this course by fabrication of orthodontic appliances make the students ready for the first clinical Orthodontics course. *Prerequisite: ORT 301*

CDE 302: Community Dentistry I (1 Cr)

This course covers the role of the dentist in public health dental programs, economic, legal, and professional aspects of dental practice, regulatory policy for dental practice in UAE, business principles in dentistry and public service mobile dental clinics. This course helps students in identifying his/her role in public health dental programs and avoiding un-legal mistakes during dental practice. Moreover, it provides information needed for initiating his/her business after graduation. The course also prepares the students to function as a community and first level dentist in accordance with the college and nation's goals.

Prerequisite: Nil

SEM 302: Seminars (2 Cr)

The course enable the students to integrate the knowledge, skills, and competencies acquired in the Biostatistics Course (BIS 201) in semester three and research methods and ethics course (RME 301) in semester 8 with the clinical knowledge and skills to conduct a research in the field of practice. The students will have the opportunity to apply the knowledge and skills developed during the previous courses of study in a comprehensive research. This includes the development of the required tools and methods to answer a specific research question, choosing study subjects, application of ethically acceptable process for data collection, planning for data management and analysis; using of the SPSS software to analyze the data in addition to the writing and critical appraisal of a research paper. The course also focuses on basic ethical and legal principles pertaining to research including; academic misconduct, confidentiality of information and informed consent, concepts of bias, confounders, validity precision, accuracy and their applications in research are also discussed in this course while implementing the research work source.

END 302: Endodontics II (3 Cr)

This is the second course in a series of Endodontics to facilitate the transition from preclinical to clinical. This course provides an introduction to advanced concepts of clinical endodontics so that the student can diagnose and suggest courses of treatment for endodontic diseases, management of pulpal pathology of permanent teeth. The laboratory part trains the student in procedures locating preparing and filling the root canals of human teeth. *Prerequisite: END 301*

LAN 302: Local Anesthesia (1 Cr)

This course covers the fundamentals of Anaesthesia, nerve conduction and pharmacology, safe and efficient administration of anesthetic agents. These information help students in suggestion of the most appropriate anesthetic agent according to each case. This course will enable the students to apply the knowledge and skills of local anaesthesia in all dental practice. *Prerequisite: ANA 102, HPH 102*

OSR 302: Oral Surgery I (3 Cr)

This preclinical course in oral surgery is the first course in a series of oral surgery courses and is intended for offering initial knowledge in oral surgery. This course is concerned with basic techniques for instrumentation, patient management, to prepare the student for the preclinical course. This course introduces the knowledge of oral and maxillofacial surgery, instrumentation, asepsis, principles and basics of extractions, surgical removal of teeth, biopsy techniques, and complications induced by surgical processes. It includes pre-and post-operative patient management difficulties of complicated extractions. *Prerequisite: MIC 201, PHA 201*

Semester - 7

OSR 401: Oral Surgery II (2 Cr)

The clinical program in oral surgery is intended to give the students a standard clinical experience in office surgical procedures and problems associated therewith. This is the second course in a series of oral surgery courses for offering clinical skills in oral surgery. This course is concerned with reviewing patients' charts to determine routine surgical procedures, surgery of impacted teeth, soft tissue surgical procedures, hard tissue surgical procedure, and clinical uses of anesthetic agents, antibiotics, nitrous oxide and analgesics. The clinical part includes teeth extraction and removal of roots under supervision of faculty members. These skills prepare the students for the more advanced clinical courses, extramural practicum and internship. *Prerequisite: OSR 302*

END 401: Endodontics III (2 Cr)

This is the first clinical course in the series of Endodontics courses. This course introduces the student to the clinical application of skills learned in the relevant preclinical courses. It covers the clinical experience in examination, evaluation, diagnosis, treatment planning and management of endodontic patients under the supervision of faculty members. The course will provide knowledge of drugs to be given to the endodontic patients. The course shall provide the techniques to manage tooth discoloration by internal and external bleaching. The course also includes endodontic mishaps where the student understands prevention, detection, management and treatment. The course will prepare the undergraduates to deal with cases that require vital pulp. The course shall also focus on restoration of endodontically treated teeth. A review of Nickel Titanium rotary instrumentation will be covered in this course as it was briefly covered in Endodontics I. the course also includes traumatic injuries as they are common findings in clinical life. Endodontic treatment in primary teeth is also included in the course. This course will enable the students for Endodontics IV. *Prerequisite: END 302*

FPR 401: Fixed Prosthodontics III (2 Cr)

This is the third course and the first clinical course in the series of fixed partial denture. It offers more knowledge on Prosthodontics and the first clinical experience in this field. This course introduces the student to the clinical application of skills learned in the relevant preclinical courses. In this course the student provides fixed partial denture care under faculty supervision. Students perform simple clinical cases and accomplish all laboratory procedures associated with the treatment fixed partial denture cases. This course exposes the student to the interaction with the professional dental laboratory technician. It provides the students with knowledge on implications of danger of ignoring tooth which needs execution. *Prerequisite: FPR 302*

RPR 401: Removable Prosthodontics III (2 Cr)

This course provides the student with clinical experience needed for the diagnosis and treatment planning necessary for the treatment of the partially and completely edentulous patient. Students are required to directly deal with patients under the supervision of staff as regards diagnosis, treatment planning, impression taking, recording centric occlusion, try-ins, delivery and follow up of partial and complete dentures complaints. *Prerequisite: RPR 302*

ORT 401: Orthodontics III (2 Cr)

This is the first clinical course in the series of orthodontics, in which the students start their knowledge, skills and experience in clinical orthodontic and carry out diagnosis and management of orthodontic problems. The course covers diagnosis, radiological and clinical

examinations of selected cases, orthodontic study models, photographs and cephalometric evaluation, preparation of treatment plans with limited treatment of orthodontic problems encountered in the general practice. *Prerequisite: ORT 302*

ODG 401: Oral Diagnosis (3 Cr)

This clinical course enables the student to take patient history, conduct complete regional, extra- and intra- oral examination; obtain appropriate diagnostic tests including radiographs, obtain medical advice and reach conclusions regarding patients' health status. Also, it offers knowledge, on treatment planning, principles associated with diagnostic methods and data analysis followed by treatment planning of various orofacial diseases. Communication skills and aids are used for presentations. *Prerequisite: All Pre-clinical courses*

ORD 401: Oral Radiology II (2 Cr)

This is the second course in the series of oral radiology courses. It is designed to offer proper use of equipments, infection control and quality assurance methods, application of different intra-oral radiographic techniques with related positioning of the patients and using auxiliary devices for positioning, and evaluation of radiographs under supervision of staff. These skills help students in performing radiological investigations, assessing the risks of radiation and the benefits of radiographic procedures, also select, take and process the most appropriate radiography. Students will be shown how to obtain intra and extra oral films including periapicals, occlusal films and also will be introduced to panoramic radiography, TMJ imaging techniques and other imaging modalities. Clinical experience optimizes patient and staff communication. *Prerequisite: ORD 202*

PDN 401: Preventive Dentistry (2 Cr)

This course covers the principles and techniques of infection control, dental hygiene with emphasis on preventive dental care programs; laboratory and preclinical experience in techniques of complete oral prophylaxis services, principles and methods for teaching and motivating patients to practice effective oral health care, role and use of fluorides in preventive dentistry, role of sealants in preventive dentistry. *Prerequisite: All Pre-clinical courses*

PER 401: Periodontics II (2 Cr)

Periodontics is the branch of dentistry dealing with gingival, periodontal and other related disease of the periodontium. Courses of periodontics are designed to provide didactic and simulated experiences in the prevention of oral diseases and management of periodontal disorders. This course covers diagnosis of acute periodontal conditions, early onset periodontitis, and diseases affecting the periodontium, management of periodontal disease, ultrasonic instrumentation and regeneration of periodontium. Laboratory exercises provide

the students the training necessary for removal of calculus, root planning and polishing of teeth on dummy heads. The acquired knowledge and simulated experiences will prepare the students for the subsequent clinical courses. *Prerequisite: PER 302*

OPD 401: Operative Dentistry III (2 Cr)

This course is the first course in a series of operative clinical dentistry courses to give students knowledge and clinical experience in restorative Dentistry. It provides the clinical experience necessary for helping students in carrying out proper diagnosis and treatment planning. It also covers topics fulfilling the esthetic demands of the patients and advanced Restorative Dentistry. *Prerequisite: OPD 302*

Semester - 8

END 402: Endodontics IV (2 Cr)

This Course is a continuation of Endodontics III for more experience and skills in Endodontics. The course covers endodontic surgery, endodontic adjuncts, orofacial pain, geriatric endodontics as well as understanding the advanced endodontic concepts including endodontic-periodontic relationship. Pulpal and periapical emergencies and differential diagnosis of the pulpal pathology will be done by the students under the supervision of the faculty members. The students must carry out independently, diagnosis and treatment as well as follow up of the patients to assess the effectiveness of treatment. Evaluation of previously root canal treated teeth whether they are successful or failed and how to proceed. This course shall enable the students to perform comprehensive examination, evaluation, diagnosis, treatment planning and management of endodontic patients.

Prerequisite: END 401

PER 402: Periodontics III (2 Cr)

Periodontics is the branch of dentistry dealing with gingival, periodontal and other related disease of the periodontium. Periodontology courses are designed to provide didactic, and experiences in the prevention of oral diseases and management of periodontal disorders. During this clinical course, the student can adequately diagnose the patients with periodontal condition and provide instructions to patients for plaque control and treatment of an acceptable number of patients by scaling and root planning for gingivitis and mild to moderate cases of periodontitis. These procedures are carried out under faculty supervision. *Prerequisite: PER 401*

RPR 402: Removable Prosthodontics IV (2 Cr)

This course is a continuation of the clinical experiences gained in the previous relevant courses concerning the diagnosis, treatment planning, advanced laboratory procedures and clinical phases of removable prosthodontic therapy. It covers advanced procedures with

emphasis on jaw relation registration and complex cases involving severely resorbed alveolar ridges. It optimizes the knowledge of students and the experience of clinical prosthodontics. They can carry out partial or complete denture independently.

Prerequisite: RPR 401

FPR 402: Fixed Prosthodontics IV (2 Cr)

This is the fourth course in a series of courses of fixed partial denture and the second and final course of clinical series. This course covers clinical application of knowledge and skills for diagnosis and treatment planning and fabrication of more advanced cast restorations that will function in a biological environment. The student is expected to manage their clinical treatment procedure with progressively less supervision and assistance from the faculty. The student must follow up the patients, and assess the effectiveness of treatment. *Prerequisite:*

FPR 401

OME 402: Oral Medicine (3 Cr)

This course is essential for offering student's knowledge on orofacial diseases it provides taxonomy, etiology pathogenesis, diagnosis and treatment of oral lesions due to systemic diseases or fractures to allow dentist carry out diagnosis and treatment of these diseases.

This course includes the etiology and clinical signs and symptoms and management of diseases of the oral mucosa in general it also covers the oral manifestations of systemic diseases and how they affect the oral mucosa with special emphasis on common and serious diseases such as leukemia, HIV/AIDS related oral lesions, diabetes, etc. *Prerequisite: GMD 202*

OPD 402: Operative Dentistry IV (2 Cr)

This clinical course is a continuation of the Operative Dentistry courses. It equips the students with the skills to properly diagnose, form a treatment plan and perform a number of esthetic procedures with appropriate materials in the context of comprehensive care. New concepts in esthetic dentistry are applied in this course and involve more than merely providing porcelain veneers to patients. It encompasses a broad approach to the total esthetic needs of the patient. The intention is to share new information with students as it becomes available. *Prerequisite: OPD 401*

ORT 402: Orthodontics IV (2 Cr)

This course is a continuation of the previous relevant courses for increasing experience in diagnosis and treatment of orthodontic problems, with expected optimized improved clinical judgment and an opportunity to review longitudinal results of treatment. The student is expected to diagnose complex orthodontic problems requiring treatment by a specialist.

Prerequisite: ORT 401

OSR 402: Oral Surgery III (2 Cr)

This course completes the series of Oral Surgery courses whereby students learn reviewing of hospital charts, perform and obtain consultations, interact with medical colleges. The theoretical part covers the preparation of mouth for dentures; provide care to medically compromised patients, interpretation of radiographs, management of emergency cases and procedures for surgical root removal. The clinical part includes minor soft, hard tissue surgical procedures, practicing of root removal and preparation of mouth for denture under the direct supervision of the oral and maxillofacial surgical residents and attending staff. The students throughout this course must gain experience, skills and self-confidence sufficient to carry out minor surgical cases. The students are prepared for practicing more advanced surgery after graduation during internship. *Prerequisite: OSR 401*

Semester - 9

PED 501: Pediatric Dentistry I (3 Cr)

This course represents the foundation for pediatric dentistry courses. It provides an introduction to numerous aspects of pediatric dental practice and treatment. These encompass child psychology, behavioral management, growth and development, cavity preparation and restoration of primary teeth, and the young permanent dentition, nutrition caries control, radiography, pulp therapy, stainless crowns, space maintenance, treatment of injuries, preventive orthodontics, risk assessment in Pediatric Dentistry including caries risk assessment, caries preventive strategies, radiation, periodontal risk assessment for children, risk assessment for traumatic injuries, anesthetic risk assessment, fluoride (safety and toxicity), dietary analysis and advice. Students manage children in the clinic with accent on caries preventive measures, cavity preparation and restoration, pulpotomy, tooth preparation and construction of stainless steel crowns. *Prerequisite: All previous clinical courses*

CDE 501: Community Dentistry II (1 Cr)

This Course will discuss with the various activities carried out in the field of community dentistry which includes Primary Health Care Approach, prevention, health education and promotion, pit and fissure sealants, atraumatic restorative treatment (ART), fluoride & dental health. This course will also include the study of sociology, social class & occupational classification, family & cultural factors in health & disease, their relevance in dental practice and the factors influencing the utilization and delivery of dental health care services. *Prerequisite: Nil*

COC 501: Clinical Occlusion (2 Cr)

This course completes with the relevant courses, especially principles of occlusion, the essential information and skills needed for dental occlusion. It reinforces the basic concepts of occlusion and integrates these concepts with the clinical situations that the students are experiencing. It also covers the diagnostic considerations, preliminary therapy and treatment sequencing. *Prerequisite: POC 201*

DPM 501: Dental Practice Management (3 Cr)

This course is a continuation of the previously taught course in ethical and medico-legal aspects of dentistry. It is primarily concerned with reviewing the previously taught principles and standards of professional conduct and ethical behaviour that apply to all dental practitioners. This course also covers non dental legislation affecting dentists, including inquests. *Prerequisite: Nil*

MCP 501: Medically Compromised Patients (1 Cr)

This course covers medical, dental, psychological and social problems of medically compromised patients and role of dentist in diagnosis and treatment of these patients. According to the nature of the medically compromised patients, each one may need special collection of the data, diagnosis and treatment planning. Also, the management of health care of these patients must be tailored according to the nature of each patient. This course is designed to provide the students information and experience to deal with these patients.

Prerequisite: All previous clinical courses

PDG 501: Principles of Differential Diagnosis (2 Cr)

This course provides the proper sequences used to differentiate between diseases. It serves to utilize relevant didactic and clinical information in the appropriate context. It emphasizes the role of the dentist in developing appropriate comprehensive, prioritized, and sequenced treatment plan based on evaluation of all relevant diagnostics with demonstrations of case studies. *Prerequisite: All previous Clinical courses.*

PER 501: Periodontics IV (2 Cr)

Periodontics is the branch of dentistry dealing with gingival, periodontal and other related disease of the periodontium. Periodontology courses are designed to provide didactic, and experiences in the prevention of oral diseases and management of periodontal disorders. This course covers more advanced topics including management of periodontosis, teeth mobility, splinting, general principles of surgical periodontics including preprosthetic and plastic surgery, as well as occlusal therapy. The student gains experience in instructing the patients to follow preventive oral hygiene measures as well as develop the skills to carry out independently diagnosis, treatment and follow up of the patients. *Prerequisite: PER 402*

HDT 501: Hospital Dentistry (3 Cr)

This course provides students with practical experiences for diagnosis, treatment and the follow up of patients currently found in hospitals. It is essential for preparing students to the internship phase. The students must practice active interaction with out- and in-patients, facilities, activities, and health specialties. Presentations of students must illustrate their capability for collection of patient information as chief complaints, general examinations, medical history, dental history, social history, diagnostic measures and lab tests. The students must discuss dental examinations, clinical lab tests and treatment plan with senior dentists and hospital staff. *Prerequisite: All previous clinical courses*

Semester - 10

CDC 502: Comprehensive Dental Clinic (3 Cr)

This course is essential to students to apply the fundamental principles of biomedical sciences as they relate to the practice of general dentistry, apply the fundamental principles of behavioural sciences, employ the interpersonal and communication skills, apply the principles of ethical reasoning and professional responsibilities, practice continual learning and self-assessment, use critical thinking and problem solving, apply the contemporary information technology in the practice, and manage oral care for geriatrics as a model for comprehensive care. This helps students to understand the concept of comprehensive care to help in its application for other areas of dental care. This course provides the student excellent opportunities to integrate and demonstrate their knowledge and skills as a result students develop a well-rounded global understanding of dental care and improve their readiness and preparedness to practice dentistry after graduation.

Prerequisite: All previous clinical courses

PER 502: Periodontics V (2 Cr)

This course is designed to introduce the students to basic surgical techniques available to manage selected periodontal cases, gingivectomy, pocket eradication, periodontal flaps, etc. The laboratory work is designed to help students in gaining limited hands-on preclinical experience. *Prerequisite: PER 501*

PED 502: Pediatric Dentistry II (3 Cr)

This course represents an extension to the previous Pediatric Dentistry course. Students manage children in the clinic with accent on caries preventive measures, cavity preparation and restoration, pulpotomy, tooth preparation, construction of stainless steel crowns, and management of dental trauma under supervision. The course ensures continued clinical training and further experience in the field of pediatric dentistry. *Prerequisite: PED 501*

GER 502: Geriatrics Dentistry (1 Cr)

This course covers challenges of the aging process, including demography, epidemiology, psychological aspects, pathological changes, gingival recession, root caries, oral aging problems, special pharmacological considerations, and functional declines, e.g. Alzheimer's disease, with special emphasis on comprehensive elderly patient oral care.

Prerequisite: All previous clinical courses

ADV 502: Advanced Diagnosis, Oral Medicine, Pathology and Radiology (2 Cr)

This course is essential for reviewing more complex oral problems and to cover questions and inquiries raised through hospital dentistry. It covers methods used for advanced diagnosis, oral medicine, pathology and radiology. This course provides reviews of the more complex oral problems, various tests used to determine definite diagnosis, review of pathology and radiology in diagnosis and various methods of treatment of dental diseases. This course will include seminars utilizing radiographs, slides and photomicrographs to review normal anatomy, developmental anomalies and pathology. These seminars include discussions using actual cases to correlate radiographic, clinical and histopathological findings. Nevertheless, it provides the students through active learning an overview on dentistry as a profession offering services for the patient in particular and the society in general. *Prerequisite: All previous clinical courses*

CDE 502: Community Dentistry III (2 Cr)

This course will discuss the role of the dentist in public health programs, ethical and legal responsibilities, the doctor's obligation to patients, profession, and the community. The concept of clinical governance, dental practice management, business principles in dentistry and finance in dentistry will be discussed. The course will help the students in identifying his/her role in public dental health programs. The impact of the problems of access, barriers to dental care and the ways to overcome the effects, overview of the health care system and problems at the national and international level will also be discussed.

Prerequisite: Nil

IMP 502: Implantology (2 Cr)

This course provides the students with the basis and fundamentals of Implantology. It covers basic concepts, biology and techniques in implant surgery, indications for implants as a treatment modality, relevant prosthodontics, peri-implant tissue maintenance and various implant system concepts and techniques of bone grafting and soft tissue grafting, growth of new bone, management of trauma due to dentofacial complications and implant maintenance with demonstrations. As this field needs more skills, this course renders the students acquainted with the importance of implantology, hopefully he/she may decide for more skills in graduate studies. *Prerequisite: All previous clinical courses*

MEM 502: Medical Emergencies (2 Cr)

This course teaches the students the process of differentiation between systemically healthy and non-healthy patients, his/her role with other health care providers for certain medical emergencies, and techniques of medical emergencies as cardiopulmonary advanced cardiac life support (ACLS) with demonstrations. The latter is important since the dentist may face cases that urgently need his/her intervention by advanced cardiac life support. *Prerequisite: All previous clinical courses*

**BACHELOR OF BIOMEDICAL
SCIENCES [BBMS]**

25. BACHELOR OF BIOMEDICAL SCIENCES (BBMS)

25.1 Overview

Bachelor of Biomedical Sciences [BBMS] is a 4-year / 8-semester / 128-Credit Hours program offered by College of Medicine, GMU. The program comprises of 55 courses and all courses are mandatory for all students. The program learning outcomes are aligned to Level 7 of the National Qualifications Framework – QF Emirates.

The program comprises of general education courses equivalent to 27 credits and core biomedical science courses equivalent to 84 credits. All students are required to submit a research project as part of program requirement which carries 5 credits of course work.

The last semester is devoted to internship equivalent to 12 credits when the student is rotated to various laboratories. During internship, the student gains on the job experience under the close supervision of his / her teachers which serves to provide opportunities to attain appropriate higher skill levels as they have completed the didactic requirements of the course and is now given opportunities to further improve their skills and master it before they enter independent practice as laboratory and/or research personnel.

On successful completion of the program, the BBMS graduates will be able to enter a career that is service-oriented in the laboratory sciences or medical diagnostics industry or in an academic field in the Biomedical Sciences. An additional path that will be open to the BBMS graduate is embarking on an intensive course of studies in a field such as Clinical Chemistry, Toxicology, Microbiology, Genetics, Molecular Biology, Public Health etc. leading initially to a Master degree.

25.2 Vision

The vision of College of Medicine, GMU is to pursue excellence in health education, biomedical research and patient care. The College of Medicine aspires to:

- Attract the best of students and provide a unique learning experience incorporating the best practices in health education;
- Produce competent doctors who will make a significant contribution to the health of the community through pursuit of academia, research and healthcare;
- Be known for excellence in health professions education and research and its impact on the educational milieu of the nation and patient care.
- Be an integral part of the community with enhanced community engagement and provide quality education in health and biomedical sciences in collaboration with the country's healthcare planners.

25.3 Mission

The mission of College of Medicine, GMU is to:

- Commit to prepare highly competent doctors to meet the evolving healthcare needs of the nation and the region;
- Strive to produce doctors who will be able to pursue postgraduate training in any of the various specialties, contribute to research and adopt an evidence-based approach to patient-care;
- Promote health services incorporating the latest advances in scientific knowledge in a manner that supports education and research for the benefit of the community.

25.4 Goals and Objectives

This program of studies leading to the Degree of Bachelor of Biomedical Sciences has been developed to enable the graduates to integrate a broad generic base of knowledge and skills in fields affiliated to medical sciences and acquire competencies at an in-depth level in an area of choice. The program will also emphasize and equip the graduate with the skills needed for life-long learning, effective team work and scientific enquiry.

25.5 Program Learning Outcomes

Knowledge:

The student on completion of the program will be able to:

- A1:** Demonstrate theoretical knowledge and understanding of principles and concepts in biomedical sciences and allied fields.
- A2:** Apply knowledge in biomedical sciences for solving problems in the health-related fields and critically assess the results.
- A3:** Analyze critically and integrate new knowledge obtained through research with concepts from allied fields.

Skill:

The student on completion of the program will be able to:

- B1:** Perform biomedical and clinical laboratory procedures, using an evidence based approach, to function effectively in the assigned role.
- B2:** Plan and perform research in biomedical sciences using appropriate tools.
- B3:** Use informatics and communication skills for management of records, adapting to advances in technology, and to enhance work performance.

Aspects of Competence:

Autonomy and Responsibility:

The student on completion of the program will be able to:

C1a: Manage various problems arising in the workplace using innovative thinking and appropriate management skills.

C1b: Take decisions and actions paying due attention to patient safety and confidentiality, cultural diversity and legal requirements by observing relevant rules and regulations.

Role in Context:

The student on completion of the program will be able to:

C2a: Function as an effective leader and team member, when dealing with peers and superiors, in technical and research teams, to ensure achievement of group and individual outcomes.

C2b: Assist health professionals, in inter-professional teams, in health promotion and disease prevention through health education and implementing basic preventive measures.

Self-Development:

The student on completion of the program will be able to:

C3: Observe ethical standards, self-evaluate and possess skills of life-long learning for maintenance of competence and advancement in profession.

25.6 Matrix of Program Learning Outcomes (PLO) aligned with QF Emirates

National Standards of Learning Outcomes for Bachelor Level Program (UAENQF Level 7)	Learning Outcomes of Bachelor of Biomedical Sciences Program										
	A1	A2	A3	B1	B2	B3	C1a	C1b	C2a	C2b	C3
I. Knowledge											
Specialized factual and theoretical knowledge and an understanding of the boundaries in a discipline, encompassing a broad and coherent body of knowledge and concepts, with substantive depth in the underlying principles and theoretical concepts.	√										
It also covers an understanding of allied knowledge and theories in related fields of work or disciplines and in the case of professional disciplines including related regulations, standards, codes, conventions as well as an understanding of critical approach to the creation and compilation of a systematic and coherent body of knowledge and concepts gained from a range of sources.	√										

Encompassed is a comprehensive understanding of critical analysis, research systems and methods and evaluative problem-solving techniques and familiarity with sources of current and new research and knowledge with integration of concepts from outside fields.		√	√									
II. Skills												
Technical, creative and analytical skills to:												
Solve specialized problems using evidentiary and procedural based processes in predictable and new contexts that include devising and sustaining arguments associated with a discipline				√								
evaluate, select and apply appropriate methods, procedures or techniques in processes of investigation towards identified solutions;				√								
evaluate and implement appropriate research tools and strategies, and					√							
present, explain and/or critique complex and unpredictable matters using highly developed advanced communication and information technology skills.						√						
III. Aspects of Competence:												
III a. Autonomy and Responsibility												
Can take responsibility with conditional autonomy for:												
developing innovative and advanced approaches to evaluating complex and unpredictable procedures and processes, resources or learning							√					
analysing the management of technical, supervisory or design processes in unpredictable, unfamiliar and varying contexts							√					
working creatively and/or effectively as an individual, in a team leadership role, in managing contexts related to technical or professional activities, and							√					
expressing an internalised, personal view, and accepting responsibility to society at large and to socio-cultural norms and relationships.								√				

III b. Role in Context											
Can function within the specialisation of the discipline with autonomy in technical contexts and adopt para-professional roles with little guidance and take responsibility for:											
setting and assessing the achievement of group or individual outcomes									√		
management and supervision of the outcomes of the work of others or self, and									√		
participating in peer relationships with qualified practitioners and multiple, complex groups and identify responsibility for managing the professional development and mentoring of individuals and groups.										√	
III c. Self-Development											
Can self-evaluate and take responsibility for:											
contributing to professional practice and development and/or further learning and manage learning tasks independently and professionally, in complex and sometimes unfamiliar learning contexts, and											√
contributing to observing ethical standards											√

25.7 Program Learning Outcomes aligned with each course

Course Code	Course Title	Program Learning Outcomes										
		A1	A2	A3	B1	B2	B3	C1a	C1b	C2a	C2b	C3
GE-ENG 101	English Language and Composition						F					P
GE-MBS 112	Mathematics for Biological Sciences	P	P									P
GE-CHM 114	General Chemistry	P	P									P
GE-ISC 101	Islamic Culture	-	-						P	P		P
GE-GPH 101	General Physics	P	P				P			P		P
GE CSK-101	Introduction to Communication skills	-	-				F			P		P
FLS 101	First Aid and Life Support	P	P				P	P	F	P	P	

IBM 101	Introduction to Biomedical Sciences I	P	P						P	P		F
GE-CCA 101	Computer Concepts and Applications						F			P		P
SHC 101	Social Issues in Healthcare	P	P						P			P
MET 101	Medical Terminology	F	F								P	P
GE-USO 101	UAE Society						P		P	P		P
GE-CDI 201	Cultural Diversity						P		F	P		P
GE-HUB 101	Human Biology	F	F							P		P
GE-IBS 101	Introduction to Behavioral Sciences	P	P				P			P		P
LET 101	Law and Ethics for Health Professionals	F	F						F	P		P
IBM 102	Introduction to Biomedical Sciences II	P	P						P	P		F
HAP 201	Human Anatomy and Physiology I	F	F	P	P	P	P			P		P
CBH 201	Cell Biology and Histology	F	F	P	P	P	P			P		P
HDB 201	Human Developmental Biology	F	F	P	P	P	P			P		P
HGE 201	Human Genetics	F	F	P	P	P	P		P	P		P
BCH 201	Biochemistry I (Biomolecules)	F	F	P	P	P	P			P		P
PAT 201	Principles of Analytical Techniques and Instrumentation	F	F	P	F			P		P		P
SKI 201	Skills for biomedical science students (Scientific literature search, Writing and Presentation)	P	P	P		F	F		P			F
HAP 202	Human Anatomy and Physiology II	F	F	P	P	P	P			P		P
BCH 202	Biochemistry II (Bioenergetics and Metabolism)	F	F	P	P	P	P			P		P
FMI 202	Fundamentals of Microbiology	F	F	P	P	P	P			P		P
FMB 202	Fundamentals of Molecular Biology	F	F	P	P	P	P			P		P
PSI 201	Promotion of Safety and Infection Control	F	F	P					F		P	P
INU 202	Introduction to Nutrition	F	F	P		P	P			P	P	P
NSC 202	Neuroscience	F	F	P	P	P	P			P		P

GPA 301	General Pathology	F	F	P	P	P	P			P		P
PPH 301	Principles of Pharmacology	F	F	P	P	P	P			P		P
IIM 301	Introduction to Immunology	F	F	P	P	P	P					P
IBI 301	Introduction to Bioinformatics	F	F	P	P	P	F			P		P
MMI 301	Medical Microbiology I (Bacteriology and Mycology)	F	F	P	P	P	P			P	P	P
BIS 201	Biostatistics	F	F	P		F	P					P
GE-RME 101	Research Methods	F	F	P		F			P			P
MMI 302	Medical Microbiology II (Virology and Parasitology)	F	F	P	P	P	P			P	P	P
OSP 302	Organ-System Pathophysiology	F	F	P	P	P	P			P		P
FEP 302	Foundations in Epidemiology	F	F	P		P	P				P	P
PFM 302	Principles of Forensic Medicine	F	F	P		P	P		P	P		P
ENO 302	Environmental and Occupational Health	F	F	P		P	P			P	P	P
PHR 302	Pharmacology	F	F	P	P	P	P			P		P
PRO 401	Research Project Proposal	F	F	F	P	F	P	P	F	P		P
MMB 401	Medical Molecular Biology	F	F	P	P	P	P		P	P		P
JBS 401	Journal Review in Biomedical Sciences	F	F	F		P	P			P		F
CBT 401	Clinical Biochemistry and Toxicology	F	F	P	F	P	P		P		P	P
BEN 401	Biochemical Endocrinology	F	F	P	F	P	P		P	P	P	P
CIM 401	Clinical Immunology	F	F	P	F	P	P		P	P		P
PHT 401	Principles of Hematology and Transfusion Science	F	F	P	F	P	P		P	P		P
PRO 402	Research Project Work	F	F	F	F	F	F	F	F	F		F
INT 510	Internship in Laboratories	F	F	P	F		P	F	F	F	P	F
BLM 401	Basic Principles of Laboratory Management	F	F	P	F		P	P	P	P		P
PRO 403	Research Project	F	F	F	F	F	F	F	F	F		F

25.8 Program Structure

Bachelors of Biomedical Science program is a 4-year / 8-semester / 128-credit program offered by College of Medicine, GMU.

The program comprises of general education and core biomedical science courses with all courses being mandatory. Students are required to submit a research project as part of program requirement.

Students who fulfill the graduation requirements and have successfully demonstrated the achievements of all competencies will be awarded the degree of Bachelor of Biomedical Sciences (BBMS).

The program consists of 128 Credit Hours

Courses	Credit Hours
General Education	27
Biomedical Sciences	101
TOTAL	128

25.9 Plan of Study

Semester – 1

Course Code	Course Title	C H	L H	NLH	Prerequisites
GE-ENG 101	English Language and Composition	3	3	0	None
GE-MBS 112	Mathematics for Biological Sciences	3	3	0	None
GE-CHM 114	General Chemistry	3	3	0	None
GE-ISC 101	Islamic Culture	2	2	0	None
GE-GPH 101	General Physics	3	3	0	None
GE-CSK 101	Introduction to Communication Skills	1	0	2	None
FLS 101	First Aid and Life Support	1	0	2	None
IBM 101	Introduction to Biomedical Sciences-I	1	1	0	None
Semester Total		17	15	4	

Semester – 2

Course Code	Course Title	C H	L H	NLH	Prerequisites
GE-CCA 101	Computer Concepts and Applications	3	1	4	None
SHC 101	Social Issues in Healthcare	1	1	0	None
MET 101	Medical Terminology	2	1	2	None
GE-USO 101	UAE Society	1	1	0	None
GE-CDI 201	Cultural Diversity	2	1	2	None
GE-HUB 101	Human Biology	2	2	0	None
GE-IBS 101	Introduction to Behavioral Sciences	2	2	0	None

LET 101	Law and Ethics for Health Professionals	1	1	0	None
IBM 102	Introduction to Biomedical Sciences-II	1	1	0	None
Semester Total		15	11	8	

Semester – 3

Course Code	Course Title	C H	L H	NLH	Prerequisites
HAP 201	Human Anatomy and Physiology I	4	3	2	GE-HUB 101
CBH 201	Cell Biology and Histology	2	1	2	GE-HUB 101
HDB 201	Human Developmental Biology	2	1	2	GE-HUB 101
HGE 201	Human Genetics	2	1	2	GE-HUB 101
BCH 201	Biochemistry I (Biomolecules)	3	2	2	GE-CHM 114
PAT 201	Principles of Analytical Techniques and Instrumentation	1	0	2	GE-CHM 114 GE - GPH 101
SKI 201	Skills for Biomedical Sciences Students (Scientific Literature Search, Writing and Presentation)	1	0	2	GE - ENG 101 GE - CCA 101
Semester Total		15	8	14	

Semester – 4

Course Code	Course Title	C H	L H	NLH	Prerequisites
HAP 202	Human Anatomy and Physiology II	3	2	2	HAP 201
BCH 202	Biochemistry II (Bioenergetics and Metabolism)	3	2	2	BCH 201
FMI 202	Fundamentals of Microbiology	3	2	2	Nil
FMB 202	Fundamentals of Molecular Biology	2	1	2	HGE 201, BCH 201
PSI 201	Promotion of Safety and Infection Control	1	1	0	None
INU 202	Introduction to Nutrition	2	2	0	BCH 201
NSC 202	Neuroscience	2	1	2	GE-HUB 101
Semester Total		16	11	10	

Semester – 5

Course Code	Course Title	C H	L H	NLH	Prerequisites
GPA 301	General Pathology	4	3	2	HAP 202 CBH 201
PPH 301	Principles of Pharmacology	3	2	2	HAP 202
IIM 301	Introduction to Immunology	2	2	0	FMI 202
IBI 301	Introduction to Bioinformatics	2	1	2	GE-CCA 101
MMI 301	Medical Microbiology I (Bacteriology and Mycology)	3	2	2	FMI 202
BIS 201	Biostatistics	3	2	2	GE-MBS 112; GE-CCA 101
Semester Total		17	12	10	

Semester – 6

Course Code	Course Title	C H	L H	NLH	Prerequisites
GE-RME 101	Research Methods	2	2	0	None
MMI 302	Medical Microbiology II (Virology and Parasitology)	3	3	0	FMI 202
OSP 302	Organ System Pathophysiology	3	2	2	GPA 301 BCH 202
FEP 302	Foundations in Epidemiology	1	1	0	None
PFM 302	Principles of Forensic Medicine	1	1	0	GPA 301, FMB 202
ENO 302	Environmental and Occupational Health	2	1	2	None
PHR 302	Pharmacology	3	2	2	PPH 301
PRO 401	Research Project Proposal	1	0	2	None
Semester Total		16	12	8	

Semester – 7

Course Code	Course Title	C H	L H	NLH	Prerequisites
MMB 401	Medical Molecular Biology	3	2	2	FMB 202
JBS 401	Journal Review in Biomedical Sciences	1	1	0	SKI 201
CBT 401	Clinical Biochemistry and Toxicology	4	2	4	OSP 302 PHR 302
BEN 401	Biochemical Endocrinology	2	1	2	OSP 302
CIM 401	Clinical Immunology	2	1	2	IIM 301
PHT 401	Principles of Hematology and Transfusion Science	3	2	2	OSP 302 IIM 301
PRO 402	Research Project Work	2	0	4	GE-RME 101 PRO 401
Semester Total		17	9	16	

Semester – 8

Course Code	Course Title	C H	L H	NLH	Prerequisites
INT 510	Internship in Laboratories	12	0	24	Successful completion of all courses from Semester 1 to 7
BLM 401	Basic Principles of Laboratory Management	1	1	0	None
PRO 403	Research Project	2	0	4	PRO 402
Semester Total		15	1	28	
Grand Total		128			

CH – Credit Hours , LH – Lecture Hours, NLH – Non Lecture Hours

25.10 Course Description

Semester – 1

GE-ENG 101: English Language and Composition

The course provides an intensive instruction in the writing process focusing on the organization of ideas in well-developed expository and argumentative essays with emphasis on developing vocabulary and writing examination answers. In the process the student will be able to document their learning experiences effectively. The objective of the course is to enable the student to demonstrate awareness of the use of professionally and technically correct written communication skills not only as a part of their program requirements but also of its contribution to their personal and professional development.

GE-MBS 112: Mathematics for Biological Sciences

This course provides concepts of mathematics including concepts of calculus needed for students of biological sciences. The course will emphasize content relevant to analyzing biological systems and application to biological systems will be illustrated. The objective of this course is to prepare the student to apply principles of mathematics including functions and their limits, derivatives of functions, integrals and solve first order linear equations to understand biological systems.

GE-CHM 114: General Chemistry

The course covers topics related to the different chemical concepts including atomic and electronic structures, periodicity, chemical bonding, molecular forms, intermolecular bonding & forces and chemical reactions. Organic compounds and reactions and their biological significance shall also be discussed. The objective of this course is to familiarize the student with common chemicals, their structure, properties and actions. The student will be able to apply principles of pH, acid-base reactions, inter-molecular interactions, organic compounds and reactions to understand common chemical reactions in the living systems.

GE-ISC 101: Islamic Culture

The course aims to introduce the learner to the concepts and beliefs in Islam that form the basis of Islamic culture. The students are expected to identify the differences, compare values and preferences in Islamic culture with the existing ones. The course consists of a general review of Islam as a religion and as an approach to life. The objective of this course is to enable the student to demonstrate awareness of the effects of culture upon interpersonal communications and interact appropriate to the culture of the colleague/patient/client.

GE-GPH 101: General Physics

This course focuses on the study of mechanics, heat and thermodynamics, electricity and its effects, properties of solids and fluids, vibrations and wave motion. The course also covers important topics like magnetism, optics, sound and nuclear physics which has relevance in health care system. The course shall also focus on safety measures to be followed in the process of working with electrical instruments. The successful completion of this course will help the students to understand the principles of physics and their application in biomedical instruments.

GE-CSK 101: Introduction to Communication Skills

The course introduces the student to the principles of communication that enhance interpersonal communication between self and other individuals in small and large group settings. Emphasis will be on the increasing importance of communication between colleagues, patient/client and care providers; and the connection between communication practices and quality patient care outcomes. The objective of this course is to enable the student to develop basic communication knowledge and skills that are necessary both in classroom, laboratories and workplace settings. As health delivery systems become more and more team-oriented, increasing competence in this area will help the student as a member of the health team to work effectively with other health professionals in the delivery of health in the future in various settings.

FLS 101: First Aid and Life Support

The course introduces students to the proper techniques of administering first aid limited to bleeding, shock, poisoning, burns, heat and cold exposure, bone and joint injuries and sudden illness. Methods of cardiopulmonary resuscitation for infants, children, adults and choking victims are also covered in this course. The objective of this course is to enable the students to provide first aid and basic life support until the arrival of an expert. The students will be trained by American Heart Association certified Instructors. The AHA accredited BLS course will be conducted in the Simulation Center and on successful completion of the course, the trainee will be certified as a BLS Provider and issued a 'BLS Provider' card valid for 2 years.

IBM 101: Introduction to Biomedical Sciences – I

Introduction to Biomedical Science- I course is a mix of interactive seminars, discussions, laboratory visits and group activities. The aim of the course is to orient students to the University, the BBMS program, roles of Biomedical Scientists and possible career pathways. Seminars by professionally qualified biomedical scientists will introduce students to ongoing research in biomedical science fields and the contribution of biomedical research to advancement of medical science. Seminars will serve to stimulate interest and spirit of critical

inquiry in the students. Students will also be taken on visits to various laboratories to introduce them to future careers and workplaces.

Semester – 2

GE-CCA 101: Computer Concepts and Applications

This course is an introduction to the most common software applications of computers and includes "hands-on" use of computers and some of the major commercial software. These software packages include typical features of office suites, such as word processing, spreadsheets, database systems, and other features found in current software packages. The objective of this course is to enable the students to use common computer applications for not only their personal study but to use it in subsequent courses for the purpose of entering, storing and retrieving data and in the conduct of assignments and research studies. They will be able to prepare written communications, present material, retrieve information from databases, develop and circulate information through appropriate channels.

SHC 101: Social Issues in Healthcare

The course introduces the students to the social issues that affect the delivery of health care. The student will be guided to read literature available in this regard to understand the inequalities and inadequacies that occur in delivery of health care as a result of social factors that can be addressed by those that are beyond the control of the individual health professional. The objective of this course is to enable the student to be aware of the social issues that affect health care delivery. They will also become aware of their own abilities and reactions to patients/clients/colleagues and recognize the need to overcome them with appropriate assistance. This will help them to value individual differences in patients/clients, family members and colleagues based on race, ethnicity, religion, gender, age, and disability. In addition, they will become aware of the growing expectations of the 'well-informed' patient/client in the current health care environment.

MET 101: Medical Terminology

The Medical Terminology course provides an introduction to the professional language used by those who are directly and indirectly involved with the health sciences sector. This course is intended to give the students a full understanding of medical terminology, from the word origins to their application. It deals with the definition and explanation of common medical terms used in biomedical sciences. Students will learn the Latin prefix and suffix commonly used in medical terms. The course will give emphasis on the mechanism of the word-building system from the origin of the term. Thus students will develop the skills to understand complex medical terms by learning about the different components of words. By the end of the course the student will be able to identify, spell, pronounce and define root words,

prefixes and suffixes commonly used in the medical field. They will also learn the correct terms required to accurately describe the human body, major pathological conditions, disorders, investigations, diagnostic procedures, treatment, medication etc. The course will also expose the participants to the basics of human anatomy and physiology. In addition, the student will also be able to use common medical abbreviations.

GE-USO 101: UAE Society

This course focuses on the unique nature of the UAE society and its political, geographical, cultural, demographical, and social aspects. It highlights the Emirati perspective of contemporary global changes. This course allows the students to explore the Emirati society in global context. The students will be able to get an insight into the unique political, geographical, cultural, demographical, and social aspects of the UAE society. They will use this knowledge in their interpersonal dealings with the individual members of this community when they meet them in the work-related settings or the community. The health care workers shall demonstrate awareness of the cultural and social sensitivities in particular in the health related management of the Emirati patients/clients in the course of their professional work.

GE-CDI 201: Cultural Diversity

The course deals with the diversity of patient/client populations that the healthcare professionals serve due to increasing globalization. In UAE the expatriate population forms 70-80% of the population made up of people from different countries and 20-30% of Emiratis. The course will highlight the factors that make individuals unique. The course will also highlight how these differences disappear when we learn to respect cultural diversity. The objective of this course is to enable the students to provide care as a health professional to different people while respecting the individuality of each person with respect to their culture, ethnicity and race.

GE-HUB 101: Human Biology

This course provides the relevant foundation for students of biomedical sciences. It introduces students to the structure and functioning of the major human body systems including the gastrointestinal, cardiovascular, respiratory, urinary, neuromuscular and endocrine systems. Concepts of genes and heredity, infection and immunity as well as the relationship between man and environment are also covered. The objective of this course is to enable the student to apply knowledge of the structure and function of the organ-systems to the working of the human body. The student will apply knowledge of heredity and the roles of chromosomes and genes, concepts of infection and immunity to understand disease states.

GE-IBS 101: Introduction to Behavioral Sciences

The course is designed to give an overview of the main topics in general psychology including biological basis of behavior and mental processes, sensation and perception, learning, motivation, intelligence, human development, personality and behavioral disorders. The objective of the course is to enable the student to understand and apply the knowledge, skills and competencies developed in this course while dealing with colleagues, patients/clients in the hospital and in community settings to communicate effectively, review systems, test and measure, involve patient/client and family members in planning and delivering care appropriate to age, gender, culture and social factors.

LET 101: Law and Ethics for Health Professionals

In this course the student will learn the legal and ethical concepts in biomedical sciences and health care, review the basic principles of ethics and law, and discuss how ethics and the law are involved in all decisions made in health care settings in the set of case-studies provided. The objective of this course is to enable the students to become aware of the legal and ethical issues they will experience as health professionals on the job and the need to evaluate the right and wrong before taking any further action when faced with ethical issues and complicated legal problems in the health care environment. The students will be aware of ethical dilemmas encountered during research and advances in science and technology and with newer devices and techniques

IBM 102: Introduction to Biomedical Sciences-II

Introduction to Biomedical Sciences-II course continues from the Introduction to Biomedical sciences-I course. The aim of this course is to introduce students to the roles of biomedical scientists and possible career pathways. Invited seminars by professionally qualified scientists will introduce students to ongoing research in biomedical science fields and the role of biomedical research in the advancement of medical science. Interactive seminars will serve to stimulate interest and spirit of critical inquiry in the students. Students will be taken on visits to various laboratories to introduce them to future careers and workplaces.

Semester – 3

HAP 201: Human Anatomy and Physiology I

This course is designed to study the structure and function of the normal body and integrates all aspects of the individual cells and organs of human body. Knowledge of the normal structure and functioning of the human body learnt in the Human Biology course in semester 2 will provide the necessary foundation for this course. The contents of the course will focus on three areas based on disease-health continuum namely structure of human body, control of normal body functions and pathophysiology or alterations in body function. The objective

of this course is to enable the student to explain the structure and function of systems of human body and their organ components of blood and immune system, musculoskeletal system, autonomic nervous system, alimentary system and integumentary system; apply the physiological principles to elucidate the pathogenesis of diseases and perform experiments to record physiological parameters and interpret the data. This course would provide the basis to explain the pathophysiological aspects of altered health as explained in General Pathology and Principles of Pharmacology courses in semester 5.

CBH 201: Cell Biology and Histology

This course will introduce students to the microscopic structure and function of the cell. It includes study of structure and functions of cell organelles, cell-cell interactions, membrane transport and cell signaling, phases of the cell cycle and regulation. Knowledge of the normal structure and functioning of the human body learnt in the Human Biology course in semester 2 will provide the necessary foundation for this course. Principles of the techniques used for studying cells and tissues will also be learnt along with opportunities to learn to identify and correlate the microscopic structure of various organs and tissues with the normal functions. This course would provide the basis to explain the pathophysiological aspects of altered health as explained in General Pathology course.

HDB 201: Human Developmental Biology

The Human Developmental Biology course is organized in two parts. In the first half of the course, focus is on the important biological principles underlying developmental biology and approaches used to study development using model organisms. Students learn the principles and processes underlying the development of an embryo from a fertilized egg as well as the advantages and limitations of model organisms used to study development. The second half of the course focuses on organogenesis with special emphasis on the human; as well as current topics in the field of developmental biology including stem cell and regenerative biology along with their applications in biomedical research and therapy. The structure and function of the human body learnt in the Human Biology course in semester 2 will provide the necessary foundation for this course. Concepts learnt in the Human Genetics course in the same semester will help students further understand the genetic approaches used to study embryogenesis and development.

HGE 201: Human Genetics

The aim of the Human Genetics course is to introduce the students to the basic principles of human genetics. It enables the student to understand the morphology and nomenclature of chromosomes and standard notations used in karyotyping, concepts related to chromosomal abnormalities including numerical and structural abnormalities and mosaicism, single-gene inheritance, complex inheritance, variations in expression of dominant and recessive

phenotypes and population genetics including Hardy-Weinberg Equilibrium, founder populations and frequently occurring alleles. Pedigree charts and ethical issues in medical genetics will also be discussed. This course along with Human Anatomy and Physiology, Cell biology and Histology, Human Developmental Biology and Fundamentals of Molecular Biology which is taught in the same year (Year 2) make a strong foundation for Medical Molecular Biology that is taught in year 4. Student seminars will make them aware of recent advances and ongoing research.

BCH 201: Biochemistry I (Biomolecules)

The aim of the Biochemistry I course is to provide the student with an understanding of the basic structures of biomolecules and their roles in the cellular processes occurring in healthy humans. Comprehension of the structure-function relationships will enable the student to appreciate derangement of function resulting from abnormalities in structures of the biomolecules. Roles of enzymes and coenzymes and their mechanisms of action are also highlighted.

PAT 201: Principles of Analytical Techniques and Instrumentation

This course is designed to introduce the student to principles and applications of common analytical techniques used in biomedical sciences. Principles of working of some common laboratory instruments will be also be learnt. The course is taught in the same semester as the Biochemistry-I where students use basic laboratory instruments to study biomolecules such as carbohydrates and proteins. Students will also learn simple laboratory procedures and calculations. This course will provide a good foundation for the laboratory sessions in courses learnt during the 4th-8th semesters.

SKI 201: Skills for Biomedical Science Students (Scientific Literature Search, Writing and Presentation)

This course aims to develop effective literature search, scientific writing and presentation skills. It intends to enable the students to understand the various types of scientific literature available, perform an effective literature search, write a review on a scientific topic, prepare effective tables and graphs and present effective oral and poster presentations. The student will be made aware about plagiarism as well.

Semester – 4

HAP 202: Human Anatomy and Physiology II

This course is designed to study the structure and function of the normal body and integrates all aspects of the individual cells and organs of the human body. The contents of the course will focus on three areas based on disease-health continuum namely structure of human body, control of normal body functions and alterations in body function. The objective of this

course is to enable the student to explain the structure and function of systems of human body and their organ components of cardiovascular system, respiratory system, endocrine system, reproductive system and urinary system; apply the physiological principles to elucidate the pathogenesis of diseases and perform experiments to record physiological parameters and interpret the data. This course would provide the basis to explain the pathophysiological aspects of altered health as explained in the General Pathology and Principles of Pharmacology courses in semester 5.

BCH 202: Biochemistry II (Bioenergetics and Metabolism)

This course focuses on the topics of bioenergetics, metabolism of carbohydrates, lipids, proteins. Knowledge of the normal structure-function relationships of the biomolecules as well as role of enzymes and minerals learnt in the Biochemistry I (BCH201) course provide the necessary foundation for this course. Regulation and inter-relationships of metabolic pathways in the body as well as their adaptation to fed and fasting states will be discussed. Derangements in metabolic pathways in common metabolic diseases will also be learnt. Quantitative analysis of glucose, proteins, lipids, urea and uric acid in blood and body fluids will be performed. The course will also enable the student to understand the role of energy and energy transfer mechanisms in cellular reactions and processes. Knowledge of this course will form a foundation to understand the Clinical Biochemistry and Toxicology (CBT 401) and Biochemical Endocrinology (BEN401).

FMI 202: Fundamentals of Microbiology

This course provides knowledge about the fundamental characteristics of microorganisms and their structure, nutrition, metabolism, growth etc. It also deals with general mechanisms of pathogenesis of various microorganisms. It also provides knowledge about bacterial genetics. The course also provides knowledge about sterilization, disinfection & infection control. The practical sessions will cover gram staining and acid fast staining, culture media & methods used in the identification of bacteria, viruses, fungi & parasites and also serological reactions. This course will help the student to have a strong foundation regarding the basic principles involved in microbiology as well as immunology which in turn will help them to understand the concepts involved in the clinical immunology course as well as Medical Microbiology courses in subsequent semesters.

The students would be able to demonstrate understanding of infectious diseases of national & regional importance including the leading diseases present in other parts of the world. They should be familiar with the type of pathogens and their mode of transmission. They should be able to perform common laboratory procedures to identify these organisms. The students should know the various methods of sterilization and disinfection to be followed for the control of infections with these microorganisms.

FMB 202: Fundamentals of Molecular Biology

The Fundamentals of Molecular Biology course will provide biomedical students with a good foundation in concepts of molecular biology including techniques and applications. The course starts by introducing students to the structure and function of nucleic acids, organization of the genome, processes of replication, concepts of repair, RNA and protein synthesis, moves on to mechanisms of gene expression and regulation and finally to the basics of DNA technology. Genetically modified organisms and genome analysis are also touched upon. The course emphasizes the process of discovery, recent advances in technology and ethical considerations in molecular biology research.

PSI 201: Promotion of Safety and Infection Control

The course has two basic themes: promotion of safety and infection control. The first part will lay emphasis on hazardous physical and chemical agents that affect health of the worker and the patient/client in health care settings. The second part deals with infectious agents and the risk of transmission of infections due to lapses in observation of standard precautions on the part of health professionals. Field visits to the hospital and demonstrations in the Skills Lab will form a vital part of the learning experience. At the end of this course, the health professionals will be able to observe and provide patient care using principles of patient safety. The importance of observing standard precautions will go a long way in preventing the transmission of infections. This course will help the student to have a strong foundation regarding the basic principles involved in safety measures to be followed towards infection control as well as realize the importance of use of personal protective equipment while dealing with bio-hazardous material in the workplace which is vital to self and patient safety.

INU 202: Introduction to Nutrition

The Introduction to Nutrition (INU 202) course is designed to provide an understanding of the principles and concepts of nutrition. In this course, students will understand the importance of good nutrition in maintaining the normal functioning of the body as well as correlate poor nutrition to disease states including anemia, diabetes and cardiovascular disease. Global issues in nutrition including malnutrition, food safety and security as well as lifestyle disorders including obesity and eating disorders will also be discussed. Knowledge of the normal structure and functioning of the human body learnt in the Human Anatomy and Physiology course as well as the structure-function relationships of the biomolecules learnt in the Biochemistry I (Biomolecules) course provide the necessary foundation for this course. This course is taught in the same semester as Biochemistry II (Metabolism) where students learn the roles of vitamin derived coenzymes and minerals in metabolic pathways.

NSC 202: Neuroscience

The course is designed to provide an integrated approach to the learning of the normal structure and function of the human nervous system. Each of the basic science topics is incorporated in an integrated body of knowledge covering neuro-anatomy and neurophysiology. Knowledge of the normal structure and functioning of the human body learnt in the Human Biology course in semester 2 will provide the necessary foundation for this course. The objective of this course is to enable the student to explain the organization of nervous system, integrate the structure and function of the motor and sensory systems, identify the different parts of the brain in prosected specimens and understand the basis of procedures performed to examine the sensory system, motor system, reflexes and cranial nerves of an individual.

Semester – 5

GPA 301: General Pathology

This course is designed to provide an understanding of the different methods used in performance of pathological examination, and alterations of cell structure & function produced by different diseases. In this course the student will understand the cell injuries, etiology of diseases & their pathogenesis, and the different features of diseases.

This course will introduce the students to the fundamental of Pathology. The course covers characteristics of cell injury, inflammation, tissue repair, hemodynamic dysfunction, neoplasia, nutritional diseases and pathology of infectious diseases. This course is aimed to provide students through knowledge of general principles of pathology, and prepare the students for better understanding of the morphological changes through practical sessions of general pathology model slides demonstration.

Knowledge of the normal structure and functioning of the human body learnt in the Human Anatomy and Physiology course as well as structure and functions of cell organelles, cell-cell interactions, membrane transport and cell signaling, phases of the cell cycle and regulation learnt in the Cell Biology and Histology course provide the necessary foundation for this course. This course is taught in the same semester as Medical Microbiology I (Bacteriology & Mycology) where students learn the etiology, pathogenesis, diagnosis, prevention and treatment of various infectious diseases.

PPH 301: Principles of Pharmacology

This course describes the general principles of pharmacology with emphasis on the drugs acting on the sympathetic and parasympathetic systems. It deals with the physiochemical properties of the drugs essential for biological action. It covers various changes that the drug undergoes after administration and the factors that influence these processes. The site,

mechanism of action and the multiple effects of various therapeutic agents through receptor and non-receptor mechanisms is also discussed. Modalities to maximize therapeutic benefits and safety of the therapeutic drugs based on pharmacological principles are one of the key focus areas in this course. Knowledge of the normal structure and functioning of the human body learnt in the Human Anatomy and Physiology course (HAP 202) provides the necessary foundation for this course. This course is taught in the same semester as General Pathology, Introduction to Immunology, Medical Microbiology I (Bacteriology and Mycology) where students learn the pathogenesis of diseases and infections which can then be correlated with the treatment options handled in this course. This course also renders the knowledge required for understanding the actions of drugs acting on various body systems in the course Pharmacology (PHR 302).

IIM 301: Introduction to Immunology

The course deals with the structure and functions of the immune system, mechanisms of innate, humoral and cell mediated immunity. The course will provide students with the basic definitions and explanation for medical terms used in this course. This course will help the student to have a strong foundation regarding the basic principles involved in immunology which in turn will help them to understand the concepts involved in the clinical immunology course as well as Medical Microbiology courses in subsequent semesters.

It also provides basic knowledge regarding autoimmunity & immunodeficiency disorders, hypersensitivity and transplantation.

IBI 301: Introduction to Bioinformatics

Bioinformatics is a multidisciplinary subject which makes use of the concepts in mathematics, computer science, physics and chemistry to reveal the secrets of biology. Bioinformatics plays an important role in the fields of genome analysis, protein structure and function analysis, drug designing and evolutionary studies. The course will familiarize students with the tools and principles of Bioinformatics. It will enable the student to attain knowledge of a variety of software, available databases and computational tools used in Bioinformatics. The course will bridge concepts of molecular biology and the experiments with Bioinformatics.

MMI 301: Medical Microbiology I (Bacteriology and Mycology)

This course helps the students in understanding the etiology, pathogenesis, diagnosis, prevention and treatment of various infectious diseases. The student will acquire a satisfactory knowledge of major diseases caused by infectious agents (bacteria and fungi) and methods used in the microbiology laboratory to identify pathogens in clinical specimens; important pre-analytical steps in microbiology laboratory testing, such as proper specimen collection, transportation, and processing of specimens. The objective of the course is to

enable the students to demonstrate an understanding of the pathogenesis, clinical manifestations, laboratory diagnosis, treatment and prevention of infectious disease especially those caused by bacteria and fungi.

BIS 201: Biostatistics

This course introduces the biomedical student to the principles of statistics and concept of clinical trial design and analysis. Systematic critical appraisal of the design, analysis and outcomes from these trials form the basis for conclusions on effectiveness of different treatment modalities. This provides the evidence base for developing guidelines in clinical care. Research continues to be essential to develop a clearer understanding of approaches. This course is intended to cover the previously mentioned principles to enable the student to be acquainted with clinical trials especially evidence-based biomedical science.

Semester – 6

GE-RME 101: Research Methods

This course helps the novice researcher to design a research protocol for a quantitative or a qualitative study. The steps from developing a research question to implementation will be discussed extensively with the help of examples. The objective of this course is to enable the student to integrate the principles of research methodology to design a valid and reliable research protocol for conducting research on questions raised in the practice of biomedical sciences from time to time.

MMI 302: Medical Microbiology II (Virology and Parasitology)

This course helps the students in understanding the etiology, pathogenesis, diagnosis, prevention and treatment of various infectious diseases. The student will acquire a satisfactory knowledge of major diseases caused by infectious agents (viruses and parasites) and methods used in the microbiology/virology laboratory to identify pathogens in clinical specimens; important pre-analytical steps in microbiology/virology laboratory testing, such as proper specimen collection, transportation, and processing of specimens. The objective of the course is to enable the students to demonstrate an understanding of the pathogenesis, clinical manifestations, laboratory diagnosis, treatment and prevention of infectious disease especially those caused by viruses and parasites.

OSP 302: Organ System Pathophysiology

This course describes the pathophysiological processes underlying common diseases of the organ systems of the human body. It describes the structural and functional alterations in selected diseases of the cardiovascular, respiratory, alimentary, renal, endocrine, reproductive, nervous, musculoskeletal, integumentary and hemopoietic systems. The course

will enable the student to explain the role of laboratory in the diagnosis of systemic diseases. The knowledge of the normal structure and functioning of the human body, the structure – function relationships of biomolecules and the alteration of cell structure and function in diseases learnt in the previous courses will be applied to understand the pathophysiology of the organ systems in the diseased state being taught in this course.

FEP 302: Foundations in Epidemiology

The course is an introduction to the science of epidemiology. In this course we consider epidemiology in the context of human health and disease. Epidemiological studies describe the natural history of disease and identify the determinants of disease to develop interventions to modify determinants or the natural history and thus provide the basis for development and evaluation of health policies and programs. Skills include calculation of key epidemiologic measures, evaluation of the strengths and weaknesses of different epidemiological methods and investigation techniques.

PFM 302: Principles of Forensic Medicine

Forensic Medicine is that branch of medical discipline which deals with the application of knowledge of the principles and practice of medical and paramedical sciences for dispensation of justice. The course includes a comprehensive study of death and changes, mechanical & traumatic injuries, mechanical asphyxias, sexual jurisprudence, infanticide, biological fluids, and autopsy procedures. It enables the student to be well informed about medico legal responsibilities and their obligation under law and introduces the students to the ways in which medical science can assist in the resolution of legal issues in civil and criminal courts. The course teaches the student how to use knowledge of basic sciences to clarify or solve related legal problems or issues.

ENO 302: Environmental and Occupational Health

This knowledge based course provides an overview of environmental and occupational health, the variety and extent of environmental agents such as physical, biological, chemical and psychological both from natural sources and occupational origin affecting human health and relevant environmental regulations and risk assessment strategies. The course also covers principles of prevention and control of environmental and occupational hazards.

PHR 302: Pharmacology

This course provides both knowledge and conceptual understanding of the pharmacokinetic and pharmacodynamic properties of drug use and action of various classes of drugs in the treatment of different diseases affecting the cardiovascular system, renal system, hematopoietic system, respiratory system, gastrointestinal system, infections and cancers building on the basic pharmacology skills learned in Principles of Pharmacology course.

Knowledge of general principles of pharmacology such as physiochemical properties of drugs, pharmacokinetic properties, and pharmacodynamics of drugs learnt in the prerequisite course entitled “Principles of Pharmacology” will provide the necessary foundation for this course. This course includes the areas of current research in drug therapies for diseases such as life style disorders (diabetes, hypertension, and cardiovascular events), cancers and infections.

PRO 401: Research Project Proposal

This course is the first step in the process of conducting research. In this course the student will develop key skills of literature search, critical appraisal of literature, ethics, research design and scientific communication required for preparing a research proposal.

In the sixth semester while the students learn research methodology in the Research Methods course, he/she also applies the principles taught to identify a research problem for his/her own research project, prepares a research proposal according to the guidelines in the thesis manual and submits it for approval by the end of the semester. Selection of the research project topic will depend on interest of the student and must be approved by the academic advisory committee. A faculty member will agree to supervise the research project.

The research project proposal will be the basis for the research work to be conducted in the 7th semester followed by submission of the research project by the end of the 8th semester.

Semester – 7

MMB 401: Medical Molecular Biology

This course is designed to provide students with knowledge in molecular biology and integrate the understanding of the concepts and techniques of molecular biology to the diagnosis and treatment of human diseases. It will build on concepts learnt in the Fundamentals of Molecular Biology course.

JBS 401: Journal Review in Biomedical Sciences

In this course, students meet weekly to discuss recent published scientific articles within the broad field of Biomedical Sciences. The main objectives of the course are to teach and develop critical appraisal skills, to increase exposure to recent developments in biomedical sciences, and to promote gain in knowledge through discussion with experts and peers. The course also provides opportunities to promote interest in research and encourage interaction between students and faculty members. Each student will be assigned a faculty mentor who

will help the student choose an appropriate article for presentation and for guidance during preparation of the presentation.

CBT 401: Clinical Biochemistry and Toxicology

In the clinical biochemistry and toxicology course, students build on the knowledge gained in the biochemistry and the organ-system pathophysiology courses and learn to apply the knowledge to the diagnosis of diseases. Students will study the basis of the tests performed in the clinical biochemistry laboratory for the diagnosis of diseases and learn to correlate the findings to disease states. Role of the laboratory in monitoring therapeutic drugs as well as testing for drugs of abuse will also be learnt. By the end of the course, students will be able to perform independently basic tests in the clinical chemistry laboratory and interpret the findings. Importance of laboratory safety, standards and quality control in the clinical biochemistry laboratory will be emphasized. Student seminars will make students aware of recent advances and ongoing research in the field of Clinical Biochemistry.

BEN 401: Biochemical Endocrinology

In the Biochemical Endocrinology course, students will learn to integrate the knowledge gained in the Human Anatomy and Physiology, Biochemistry and the Organ System Pathophysiology courses and apply it to understand the basis of the tests performed for the diagnosis of endocrine disorders. Students learn to correlate changes in hormones to normal and disease states. The course will highlight the role of laboratory in diagnosis and management of endocrine disorders. Student seminars will make students aware of recent advances and ongoing research in the field of endocrinology.

CIM 401: Clinical Immunology

The course deals with the study of immune-pathological conditions and abnormal immune functions, and describes the principles of immunological techniques used in the diagnosis and management of various immunological disorders. The course provides a greater understanding of the role of immune system in susceptibility to diseases and measures taken for their detection and prevention.

PHT 401: Principles of Hematology and Transfusion Science

The course includes the study of development, normal structure and functions of the cellular elements of the blood and their common disorders. The course emphasizes the causes, mechanisms including molecular basis of altered structure and function, laboratory and clinical features of these disorders. Additionally, hemostasis and related disorders of bleeding and thrombosis, and the principles and use of blood products in treatment are discussed. The objectives of the course are to enable the student to further develop knowledge of hemopoiesis, and to acquire knowledge and understanding of common diseases of the

blood, bone marrow and lymphoid organs. Etiology, mechanisms, structure-function alterations underlying laboratory findings and clinical features of hematological disorders are emphasized. Principles of blood transfusion and its complications will also be studied. This course will also emphasize the ever growing prospects of translational research in hematology.

PRO 402: Research Project Work

This course is designed to provide the student an opportunity to gain practical experience in the implementation of research based on the research proposal prepared in the previous semester. In this course, the student conducts research under the supervision of the faculty supervisor according to the research proposal submitted in the Research Project Proposal course following the required guidelines after the approval of the Research and Ethics committee. The student will apply key research skills of literature search, critical appraisal of literature, ethics, research design, statistical analysis and scientific communication. The student is required to present the research work to the academic advisory committee. The data collected will be analyzed by the student and used to prepare the project report in the next semester.

Semester – 8

INT 510: Internship in Laboratories

The biomedical science student receives basic biomedical science education for 7 semesters (3.5 years) before proceeding for internship in the final semester. The student gains on-the-job experience under the close supervision of his/her teachers. It also serves to provide opportunities to attain appropriate higher skill levels as the student has completed the didactic requirements of the program and is now given opportunities to further improve his/her skills and master it before he/she enters independent practice as laboratory and/or research personnel. The internship experience also gives an insight into the practice of the chosen profession and is in itself a strong motivating factor for the learner to continue and pursue higher education and specialize further in the chosen field of study.

BLM 401: Basic Principles of Laboratory Management

The course is designed to provide the student with knowledge about the organizational structure of clinical laboratories, rules and regulations governing these laboratories and the use of basic managerial tools in their operation. The course covers the management of technical and financial resources of a laboratory and outlines the steps for performance improvement.

PRO 403: Research Project

This course is the final step in the process of conducting research. In this course, the student analyzes the results, presents the research work done before the academic advisory committee, faculty members and peers by the end of the semester for approval. After approval the student is expected to prepare the research project report according to the guidelines of the thesis manual and submit by the end of the 8th semester to the program office.

**BACHELOR OF HEALTH SCIENCES –
MEDICAL LABORATORY SCIENCES
[BHS-MLS]**

26.0 BACHELOR OF HEALTH SCIENCES - MEDICAL LABORATORY SCIENCE [BHS-MLS]

26.1 Overview

Medical Laboratory Technology is an Allied Health Care profession concerned with performing various laboratory tests for the laboratory diagnosis of the diseases.

Medical Laboratory Technicians analyze samples of blood, tissue and body fluids to determine chemical content, cell count, drug levels or blood type; they may also search for specific microorganisms like bacteria or parasites. Preparing the samples for examination, using automated equipment and specialized instrumentation, performing numerous complicated tests simultaneously and accurately interpreting the results are all part of a medical laboratory technician's job.

Whether in a medical facility or independently run laboratory, medical laboratory technicians often work with infectious specimens. Infection control and sterilization protocols must be followed to minimize these hazards. In a Hospital setup Medical Laboratory Technicians often work irregular hours or are on call for emergency situations.

The Bachelor of Health Sciences– Medical Laboratory Sciences (BHS-MLS) program learning outcomes are aligned to Level 7 of the NQF Emirates (National Qualifications Framework).

26.2 Vision

The holder of BHS–Medical Laboratory Sciences program will be a recognized leader in clinically integrated, Medical Laboratory education through collaboration among specialized professionals and institutions, serving diverse student and community populations and the Medical Laboratory Profession.

26.3 Mission

To advance the profession of Medical Laboratory Sciences in the UAE and Middle East by graduating Laboratory Technicians who demonstrates highly competent performance and professional behaviors in a dynamic health care environment. The graduates will be able to serve the health care needs of society while contributing to the advancement of the profession

26.4 Goals and Objectives

Goals

This program has been developed to enable the graduates of the Bachelor of Health Sciences (Medical Laboratory Sciences) to integrate a broad generic base of knowledge, skills and behaviors common to all health professions while developing technical skills specific to each of the health care major. This will help the graduates to work effectively both as a team member in multi-professional health care delivery teams and in an individual capacity while working in an area of specific technical expertise related to the concentrated area of study.

Objectives

- Provide broad scientifically strong education in medical laboratory that enables the graduates to enter various areas of the profession and adopt to changes that occur in the professional field.
- Maintain standards of education and services in medical laboratory.
- Ensure that students acquire specialized knowledge in theoretical and practical aspects of medical laboratory, enabling them to apply their professional skills ethically towards the community.
- Create independent, confident, and highly competent Medical Laboratory Technicians with analytical skills to handle patients in medical laboratory department.
- Provide improved health care services autonomously to patients.
- Enable graduates to engage in reflective practice and become lifelong learners.
- Produce graduates with excellent communication skills which will improve the quality of healthcare delivery.
- Open a window to further education in higher levels at local and international Universities.
- Facilitate participation in the process of improving and implementing health care services in UAE in cooperation with public and private sectors.

26.5 Program Learning Outcomes

This Program provides opportunities for students to develop and demonstrate:

(i) Knowledge

On completion of the program, students will be able to:

- A1:** Demonstrate the knowledge of medical laboratory sciences to perform different laboratory investigations and conduct research in the field of Clinical Chemistry, Microbiology, Hematology and Histopathology.

- A2:** Develop and apply specialized knowledge of Medical Laboratory Sciences to enable them in pursuing range of medical laboratory careers to provide patient centered care for the benefit of community and other stakeholders.
- A3:** Demonstrate the knowledge of Standard Operating Procedures (SOPs) in compliance to international agency requirements facilitating the process of delivering medical laboratory services.

(ii) Skills

On completion of the program, students will be able to:

- B1:** Perform pre analytical, analytical and post analytical procedures based on scientific knowledge.
- B2:** Analyze problems and propose solutions through critical thinking, demonstrating effective individual, team management and professional skills in the field of medical laboratory and related areas promoting health services.
- B3:** Utilize laboratory informatics, and communicate effectively in oral and written deploy a range of skills, techniques and strategies within workplace settings in managing cases of varied complexities with conditional autonomy.
- B4:** Practice the principles and theories incorporating Good Laboratory Practice (GLP) in the area of Medical Laboratory Sciences adhering to national and international regulations.

(iii) Competencies– Autonomy and Responsibility, Self-Development, Role in Context

Autonomy and Responsibility:

On completion of the program, students will be able to:

- C1a:** Demonstrate professional competency in handling legal and ethical issues encounter during the practice of medical laboratory data management including privacy.
- C1b:** Act individually as well as part of a medical laboratory team to manage professional responsibility of respecting the privacy, confidentiality and safety of patients in a range of context.

Role in Context:

On completion of the program, students will be able to:

C2: Demonstrate professional and effective performance of individual and team's responsibilities in medical laboratory services simultaneously ensuring professional development and mentoring of the team.

Self-Development:

On completion of the program, students will be able to:

C3: Develop personal qualities required for contributing to the advancement of one's profession, adapting constantly to advances in technology and practicing ethical values in personal and professional life.

26.6 Matrix of Program Learning Outcomes (PLO) aligned with QF Emirates

National Standards of Learning Outcomes for Bachelor Program (UAENQF LEVEL 7)	Learning Outcomes of Bachelor of Health Sciences-Medical Laboratory Sciences											
	A1	A2	A3	A4	B1	B2	B3	B4	C1a	C1b	C2a	C3
I. Knowledge												
Specialized factual and theoretical knowledge and an understanding of the boundaries in a field of work or discipline, encompassing a broad and coherent body of knowledge and concepts, with substantive depth in the underlying principles and theoretical concepts	✓											
An understanding of allied knowledge and theories in related fields of work or disciplines and in the case of professional disciplines including related regulations, standards, codes, conventions	✓		✓									
Understanding of critical approach to the creation and compilation of a systematic and coherent body of knowledge and concepts gained from a range of sources	✓											
A comprehensive understanding of critical analysis, research systems and methods and evaluative problem-	✓		✓									

solving techniques												
Familiarity with sources of current and new research and knowledge with integration of concepts from outside fields	✓	✓										
II. Skill												
Technical, creative and analytical skills appropriate to solving specialized problems using evidentiary and procedural based processes in predictable and new contexts that include devising and sustaining arguments associated with a field of work or discipline					✓	✓						
Evaluating, selecting and applying appropriate methods, procedures or techniques in processes of investigation towards identified solutions evaluating and implementing appropriate research tools and strategies associated with the field of work or discipline					✓			✓				
Highly developed advanced communication and information technology skills to present, explain and/or critique complex and unpredictable matters					✓		✓					
III. Aspects of Competence												
III.a. Autonomy and responsibility												
Can take responsibility for developing innovative and advanced approaches to evaluating and managing complex and unpredictable work procedures and processes, resources or learning										✓		
Can manage technical, supervisory or design processes in unpredictable, unfamiliar and varying contexts									✓			

Can work creatively and/or effectively as an individual, in team leadership, managing contexts, across technical or professional activities										✓		
Can express an internalized, personal view, and accept responsibility to society at large and to socio-cultural norms and relationships									✓			
III b. Role in context												
Can function with full autonomy in technical and supervisory contexts and adopt para-professional roles with little guidance											✓	
Can take responsibility for the setting and achievement of group or individual outcomes and for the management and supervision of the work of others or self in the case of a specialization in field of work or discipline											✓	
Can participate in peer relationships with qualified practitioners and lead multiple, complex groups											✓	
Can take responsibility for managing the professional development and direct mentoring of individuals and groups											✓	
III c. Self-development												
Can self-evaluate and take responsibility for contributing to professional practice, and undertake regular professional development and/or further learning can manage learning												✓
Can manage learning tasks independently and professionally, in complex and sometimes unfamiliar learning contexts												✓
Can contribute to and observe ethical standard												✓

26.7 Program Learning Outcomes aligned with each course

Course Code	Course	Program Learning Outcomes											
		Knowledge				Skill				Aspects of Competence			
		A1	A2	A3	A4	B1	B2	B3	B4	C1a	C1b	C2a	C3
GE-ENG 101	English Language and Composition		P				F	F		P	F	P	
GE-MHP 101	Mathematics for Allied Health Professionals	F					P			P		F	
GE-CCA 101	Computer Concepts and Application	F		P		F	P		P	P		P	P
GE-GPH 101	General Physics	F					P			P		F	
AH-CMB 201	Cell and Molecular Biology	F	F	P		F		P	F	P	P	P	
AH-CSK 201	Communication Skills for Health Professionals	P	P	P		F	P	F	F	F	F	F	F
AH-HCS 201	Health Care Systems		P			P		P		P			
GE-GCH 101	General Chemistry	P	P	P		F					P		
GE-USO 101	UAE Society		P				P			P			
GE-IBS 101	Introduction to Behavioral Sciences	P	F				P	P		F		P	
AH-HAP I 201	Human Body Systems - I	F	F	P		F		F	F			F	
AH-HPR 201	Health Professions	P	P	P		P			P				F
AH-LET 201	Law and Ethics for Health Professionals		F				P	P		F	F		
AH-CDH 201	Cultural Diversity in Health Care		F				P	P		F	P	P	
AH-FLS 201	First Aid and Basic Life Support	P	P			P		P	P	P	F		
GE-ICU 101	Islamic Culture	P	P				P	P		P	P	P	
AH-HAP II 202	Human Body Systems - II	F	F	P		F		F	F			F	

AH-HIM 201	Introduction to Health Information Management	P	P	P		F			F	F	F		P
LS-ICL 201	Introduction to the Clinical Laboratory	F	F	P		F		P	F			P	
LS-LBS 401	Laboratory Biosafety	P	P	P		P			P	P	F		P
LS-MLP 201	Mathematics for laboratory professionals	F	P				P			P		P	
LS-CLC I 201	Clinical Chemistry I – Basic Techniques Instrumentation	F	F	F		F		P	F	P	p	p	P
AH-SIC 201	Promotion of Safety and Infection Control	P	P	P		F			F	P	F		P
AH-PAP 201	Patho Physiology	F	F	P		F	P	P	P	P	P	P	P
AH-PTH 201	Pharmacology and Therapeutics	P	P	P		P	P		P	P	P		P
LS-CLM I 201	Clinical Microbiology I	F	F	F		F	P	P	F	P	P	P	P
LS-HEH I 201	Hematology and Hemostasis I	F	F	F		F		P	F	P	P	P	P
LS-PHL 201	Phlebotomy	F	F	P		F	P	F	F	F	F	P	P
LS-PRA I 201	Practicum I	F	F	F		F	F	P	F	F	F	F	F
GE- RMB 101	Research Methods and Biostatistics	F					P			P	P		F
AH-NDI 201	Nutrition and Diets	P	P			P	P			P	P		
AH- HWL 201	Health and Wellness for Life	P	P	P		P			P				P
AH-PHS 201	Professionalism in Health Care Settings	P	P	P		P	P	P	P	F	F	P	P
LS-CLC II 301	Clinical Chemistry II – Assessment of Organ Systems	F	F	F		F	P	P	F	P	P	F	F
LS-CLI 201	Clinical Immunology	F	F	P		F		P	F	P	P	P	P
LS-CCL 301	Communication Skills in the Clinical Laboratory		F					F		F	F	P	

LS-BFL 201	Body Fluids	F	F	P		F		P	F	P	P	P	P
LS-PRA II 201	Practicum II	F	F	F		F	F	F		F	F	F	F
AH-FEP 201	Foundations of Epidemiology	P	P	P		P			P				P
AH-SHC 201	Social Issues in Health Care	P	F	P		P	P	F	P	F	P	P	P
LS-HEH II 301	Hematology and Hemostasis II	F	F	F		F	P	F	F	P	P	P	P
LS-CLM II 301	Clinical Microbiology II	F	F	F		F	P	F	F	P	P	P	P
LS-CAS 301	Clerical and Accounting Skills for Lab Professionals	P	P	P		P	P	P	P	P	P	P	P
LS-BTN 301	Blood Transfusion	F	F	F		F	F	F	F	F	P	P	P
LS-HCG I 301	Histopathology – Cytology and Genetics I	F	F	P		F							
LS-PRA III 301	Practicum III	F	F	F		F	F	P	F	F	F	F	F
LS-CLC III 401	Clinical Chemistry III – Special	P	F	F		P	P	F	F	P	P	P	P
LS-MLS 401	Management Skills for the Laboratory Sciences	P	F	P		P	P	F	F	P	P	P	P
LS-QCA 401	QC and QA in the Clinical Laboratory	P	P	P		F	P		P	P			P
LS-CLM III 401	Clinical Microbiology III	F	F	F		F	P	F	F	P	F	P	F
LS-TLL 401	Teaching and Learning for Laboratory Professionals	P	F	P		P	P	P	P	P	P	P	F
LS-HCG II 401	Histopathology – Cytology and Genetics II	F	F	F		F		F	P	P	P	P	
LS-PRA IV 401	Practicum IV	F	F	F		F	F	P	F	F	F	F	F
LS-INR 410	Internship + Research	F	F	F		F	F	F	F	F	F	F	F

26.8 Program Structure

The Bachelor of Health Sciences – Medical Laboratory Sciences [BHS - MLS] is a 4 year / 8 Semester / 128 Credit Hours program offered by College of Allied Health Sciences. This program is based on the universal concept that patient care involves a team approach in which personnel belonging to different professions are gaining importance.

The curriculum includes a combination of courses in General Education, Allied Health Sciences, Biomedical Sciences and Professional courses in Medical Laboratory Sciences that focus on imparting knowledge and developing skills to conduct various laboratory tests.

Students who fulfill the graduation requirements and have successfully demonstrated the achievements of all competencies will be awarded the degree of Bachelor of Health Sciences (Medical Laboratory Sciences).

The program consists of 128 Credit Hours

Courses	Credit Hours
General Education	21
Allied Health Sciences	33
Professional Courses- Medical Laboratory Sciences	74
TOTAL	128

26.9 Plan of Study

Year 1 Semester – 1

Course Code	Course Title	C H	L H	N L H	Pre-requisites
GE-ENG 101	English Language and Composition	3	3	0	None
GE-MHP 101	Mathematics for Allied Health Professionals	2	2	0	None
GE-CCA 101	Computer Concepts and Application	3	2	2	None
GE-GCH 101	General Chemistry	3	3	0	None
AH-CMB 201	Cell and Molecular Biology	3	3	0	None
AH-CSK 201	Communication Skills for Health Professionals	1	1	0	None
AH-HCS 201	Health Care Systems	1	1	0	None
Semester Credit Hours		16	16	0	

Year 1 Semester – 2

Course Code	Course Title	C H	L H	N L H	Pre-requisites
GE-GPH 101	General Physics	3	3	0	None
GE-USO 101	UAE Society	1	1	0	None
GE-IBS 101	Introduction to Behavioral Sciences	2	2	0	None
AH-HAP I 201	Human Body Systems I (Anatomy and Physiology)	4	2	4	AH-CMB 201
AH-HPR 201	Health Professions	1	1	0	None

AH-LET 201	Law and Ethics for Health Care Professionals	2	2	0	None
AH-CDH 201	Cultural Diversity in Health Care	1	1	0	None
AH-FLS 201	First Aid and Basic Life Support	2	2	0	None
Semester Credit Hours		16	14	4	

Year 2 Semester - 3

Course Code	Course Title	C H	L H	N L H	Pre-requisites
GE-ICU 101	Islamic Culture	2	2	0	None
AH-HAP II 202	Human Body Systems II (Anatomy and Physiology)	4	2	4	AH-HAP I 201
AH-HIM 201	Introduction to Health Information Management	1	1	0	None
LS-ICL 201	Introduction to the Clinical Laboratory	2	1	2	None
LS-LBS 401	Laboratory Biosafety	2	1	2	None
LS-MLP 201	Mathematics for Laboratory Professionals	2	2	0	GE-MHP 101
LS-CLC I 201	Clinical Chemistry I - Basic Techniques Instrumentation	3	2	2	GE-GCH 101 AH-CMB 201
Semester Credit Hours		16	11	10	

Year 2 Semester - 4

Course Code	Course Title	C H	L H	N L H	Pre-requisites
AH-SIC 201	Promotion of Safety and Infection Control	3	2	2	None
AH-PAP 201	Patho Physiology	3	3	0	AH-HAP II 202
AH-PTH 201	Pharmacology and Therapeutics	2	2	0	GE-GCH 101, AH-HAP II 202
LS-CLM I 201	Clinical Microbiology I	3	2	2	AH-CMB 201
LS-HEH I 201	Hematology and Hemostasis I	2	1	2	AH-HAP I 201 AH-HAP II 202
LS-PHL 201	Phlebotomy	2	1	2	None
LS-PRA I 201	Practicum I	2	0	4	LS-CLC I 201
Semester Credit Hours		17	11	12	

Year 3 Semester - 5

Course Code	Course Title	C H	L H	N L H	Pre-requisites
GE-RMB 101	Research Methods and Biostatistics	2	2	0	GE-MHP 101
AH-NDI 201	Nutrition and Diets	1	1	0	AH-CMB 201
AH-HWL 201	Health and Wellness for Life	1	1	0	None

AH-PHS 201	Professionalism in Health Care Settings	1	1	0	None
LS-CLC II 301	Clinical Chemistry II – Assessment of Organ Systems	2	1	2	None
LS-CLI 201	Clinical Immunology	2	1	2	AH-HAP I 201 AH-HAP II 202
LS-CCL 301	Communication Skills in the Clinical Laboratory (case studies)	3	3	0	AH-CSK 201
LS-BFL 201	Body Fluids	2	1	2	AH-HAP I 201 AH-HAP II 202
LS-PRA II 201	Practicum II	1	0	2	LS-PRA I 201 LS-CLM I 201 LS-HEH I 201
Semester Credit Hours		15	11	8	

Year 3 Semester - 6

Course Code	Course Title	C H	L H	N L H	Pre-requisites
AH-FEP 201	Foundations of Epidemiology	1	1	0	AH-SIC 201
AH-SHC 201	Social Issues in Health Care	1	1	0	None
LS-HEH II 301	Hematology and Hemostasis II	3	2	2	LS-HEH I 201
LS-CLM II 301	Clinical Microbiology II	3	2	2	LS-CLM I 201
LS-CAS 301	Clerical and Accounting skills for Laboratory Professionals	2	1	2	GE-MHP 101
LS-BTN 301	Blood Transfusion	2	1	2	AH-HAP I 201 AH-HAP II 202
LS-HCG I 301	Histopathology-Cytology and Genetics I	1	1	0	LS-ICL 201
LS-PRA III 301	Practicum III	3	0	6	LS-PRA II 201
Semester Credit Hours		16	9	14	

Year 4 Semester -7

Course Code	Course Title	C H	L H	N L H	Pre-requisites
LS-CLC III 401	Clinical Chemistry III – Special	3	2	2	LS-CLC I 201
LS-MLS 401	Management Skills for the Laboratory Sciences	1	1	0	AH-CSK 201 LS-CCL 301
LS-QCA 401	QC and QA in the Clinical Laboratory	2	1	2	LS-PRA I 201 LS-PRA II 201 LS-PRA III 301
LS-CLM III 401	Clinical Microbiology III	3	2	2	LS-CLM I 201 LS-CLM II 301
LS-TLL 401	Teaching and Learning for Laboratory Professionals	1	1	0	AH-CSK 201
LS-HCG II 401	Histopathology-Cytology and Genetics II	3	1	4	LS-HCG I 301

LS-PRA IV 401	Practicum IV	3	0	6	LS-PRA III 301 LS-BTN 301 LS-CLI 201
Semester Credit Hours		16	8	16	

Year 4 Semester - 8

Course Code	Course Title	C H	L H	N L H	Pre-requisites
LS-INR 410	Internship and Research	16	0	32	Successful completion of all the courses offered in semesters 1 to 7
Semester Credit Hours		16	0	32	
Total Credit Hours		128			

26.10 Course Description

Semester - 1

GE-ENG 101: English Language and Composition

The course provides an intensive instruction in the writing process focusing on the organization of ideas in well-developed expository and argumentative essays with some emphasis on developing vocabulary and writing the examination answer. In the process the student will be able to document their clinical encounters and their learning effectively.

GE-MHP 101: Mathematics for Allied Health Professionals (GE-MHP 101)

This is a basic level course which reviews the concepts of mathematics that has application in health care settings while performing different procedures. The basic of statistics and logarithm is dealt with in this course which will improve the computational skills of health professionals.

GE-CCA 101: Computer Concepts and Application

This course is an introduction to the most common software applications of computers and includes "hands-on" use of microcomputers and some of the major commercial software. These software packages shall include typical features of office suites, such as word processing, spreadsheets, database systems, and other features found in current software packages.

GE-GCH 101: General Chemistry

The course covers topics related to the different chemical reactions, measurements and figures, electronic structures and periodicity; chemical bonding, molecular forms, intermolecular bonding and forces are also discussed in addition to the physical and chemical properties.

AH-CMB 201: Cell and Molecular Biology

The course provides an overview of the organization, function, and regulation of the eukaryotic cell. The cell as a basic unit of life is dealt with extensively at the structural, functional and molecular levels. A concrete learning experience is provided in the laboratory. The course lays foundation to the understanding of the human body systems and the human body as a whole.

AH-CSK 201: Communication Skills for Health Professionals

The course introduces the student to the principles of communication that enhance interpersonal communication between self and other individuals in small and large group settings. Examples from hospital settings will help the learners to visualize themselves in their future roles; lay emphasis to the increasing importance of communication between patient/client and care providers; and the connection between communication practices and quality patient care outcomes.

AH-HCS 201: Health Care Systems

This course deals with making the students aware of the important factors that influence today's health care services. A comparison of national and international health care systems is made to highlight the disparities in health care delivery based on health care economics. Health care for designated populations such as ambulatory clients, long term care clients & mental health clients will be highlighted.

Semester - 2

GE-GPH 101: General Physics

This is an introductory course that includes the study of mechanics, thermo-dynamics, vibrations and wave motions. It is a fundamental course and a basic one for health professional students. Examples of application in clinical laboratory services shall increase the relevance of this foundational course.

GE-USO 101: UAE Society

This course focuses on the unique nature of the UAE society and its political, geographical, cultural, demographical, and social aspects. It highlights the Emirati perspective of

contemporary global changes. This course allows the students to explore the Emirati society in global context.

GE-IBS 101: Introduction to Behavioral Sciences

The course is designed to give an overview of the main topics in general psychology and sociology including biological basis of behavior, mental processes: sensation and perception; learning, motivation, intelligence, human development, personality and behavioral disorders, socialization and social environment contributing to human behavior.

AH-HAP I 201: Human Body Systems I (Anatomy and Physiology)

The first part of the 2-semester course is designed to introduce the student to the major organs and tissues that form the human body systems including body planes, directions and cavities, Integumentary, Skeletal, Muscular and Nervous Systems and Special Senses. This will be done through didactic sessions in the multimedia labs with opportunities for interactive learning activities. The Gross Anatomy Laboratory sessions will use models and manikins as well as plastinated body parts to make the learning a truly concrete experience.

AH-HPR 201: Health Professions

The students will be introduced to the different health professions. The course provides opportunities to explore the nature of all the major health professions. The training requirement, job responsibilities, and employment opportunities of each will be compared. The challenges of meeting the growing demands of health care and the shortfall in workforce numbers will be discussed.

AH-LET 201: Law and Ethics for Health Care Professionals

In this course the student will learn the legal and ethical concepts of healthcare, review the basic principles of ethics and law and discuss how law and ethics are involved in all decisions made in health care settings in the set of case studies provided.

AH-CDH 201: Cultural Diversity in Health Care

The course deals with the diversity of patient/client populations that the healthcare professionals serve due to increasing globalization. In UAE, the expatriate population forms 70-80% of the population made up of people from different countries and 20-30% of Emiratis. The course will highlight the factors that make individuals unique. The course will also highlight how these differences disappear when we learn to respect cultural diversity.

AH-FLS 201: First Aid and Basic Life Support

This course is an essential for all students pursuing a health professional career. The course introduces them to the proper techniques of administering first aid limited to bleeding,

shock, poisoning, burns, heat and cold exposure, bone and joint injuries and sudden illness. Methods of cardiopulmonary resuscitation for infants, children, adults and choking victims are also covered in this course.

Semester - 3

GE-ICU 101: Islamic Culture

The course aims to introduce the learner to the concepts and beliefs in Islam that form the basis of Islamic culture. The students are expected to identify the differences, values, and preferences in Islamic culture with the existing ones. The course consists of a general review of Islam as a religion and as an approach to life.

AH-HAP II 202: Human Body Systems II (Anatomy and Physiology)

The second part of the 2-semester course is designed to introduce the student to the major organs and tissues that form the human body systems including, Circulatory, Lymphatic, Respiratory, Digestive, Urinary, Endocrine and Reproductive Systems and common tests and procedures specific to the organ systems. This will be done through didactic sessions in the multimedia labs with opportunities for interactive learning activities. The Gross Anatomy Lab sessions will use models and manikins as well as plastinated body parts to make the learning a truly concrete experience.

AH-HIM 201: Introduction to Health Information Management

An introductory course with emphasis on the basics of data generated during the delivery of care for patients/clients by individuals directly involved in health management or indirectly involved when pursuing a career in a health related activity. The course will provide an overview of the health information generated in this process to understand the current trends in the management of information from the time it is entered into patient medical records and until it is subsequently used for the purpose of billing and reimbursement, quality assurance, health surveys for accreditation, research and in developing or changing health policies. During the practicum, the use of information management systems and the protection of the health information will be emphasized.

LS-ICL 201: Introduction to the Clinical Laboratory

The student will be introduced to the clinical laboratory settings, basic laboratory equipment and glassware, laboratory safety, laboratory math, and quality control in the laboratory.

LS-LBS 201: Laboratory Biosafety

Throughout this course, emphasis shall be made to the relative hazards of infective microorganisms by the WHO Risk Groups 1, 2, 3 and 4 to highlight how the practice of good microbiological technique and appropriate use of biosafety equipment by well-trained staff

remain the fundamental elements of laboratory biosafety. Biosecurity concepts will be introduced and the latest international regulations for the transport of infectious substances will be reviewed.

LS-MLP 201: Mathematics for Laboratory Professionals

This is a mathematics course that includes the study of real number system, sets, linear functions, limits, derivatives of function and integration. It is a fundamental course for laboratory sciences. The course aims at bringing in the application of mathematical principles in laboratory sciences, which help the students to perform the mathematical calculations in the different laboratory procedures.

LS-CLC I 201: Clinical Chemistry I - Basic Techniques and Instrumentation

In this course, the student will be introduced to principles and procedures of common tests performed in Clinical Chemistry. Basic chemical laboratory techniques, and instrumentation for estimation of analytes like proteins, carbohydrates, lipids, enzymes, electrolytes and acid-base balance, methodology and clinical correlations/lab diagnosis will be discussed to highlight the physiological basis for the test, the principle and procedure for the test, and the clinical significance of the test results, including quality control and normal value.

Semester – 4

AH-SIC 201: Promotion of Safety and Infection Control

The course has two basic themes: promotion of safety and infection control. The first part will lay emphasis on hazardous physical and chemical agents that affect health of the worker and the patient/client in health care settings. The second part deals with infectious agents and the risk of transmission of infections due to lapses in observation of standard precautions on the part of health professionals. Field visits to the hospital and demonstrations in the skills Laboratory will form a vital part of the learning experience.

AH-PAP 201: Patho Physiology

This course introduces the students to the study of causes and mechanisms of diseases. The responses to injury are dealt first at the cellular level followed by changes at the level of tissues and organs. The topics include cellular pathology, inflammation and tissue repair, hemodynamic, genetic and immune disorders, neoplasia, disorders of nutrition and environmental pathology. The students then learn to apply the concepts of disease mechanisms in the setting of each organ system. The underlying pathologic basis of systemic diseases will be dealt extensively.

AH-PTH 201: Pharmacology and Therapeutics

This course presents basic pharmacologic principles along with the mechanism of action and side effects of drugs commonly used in health professional practice. The lessons are organized using a systems approach and will deal with the pathophysiology of disease and discuss the drug groups used for treatment. Case studies will be used to discuss how drugs affect medical intervention and how host factors may affect drug effectiveness.

LS-CLM I 201: Clinical Microbiology I

The course introduces the student to clinical microbiology. The student will learn collection and processing of infected samples for laboratory examination. The role of the laboratory findings in the diagnosis of infectious diseases by identification of morphology of microbial agents on microscopy and in colonies supported by biochemical findings will be highlighted. The application of microbial testing in treatment of infectious diseases will be stressed.

LS-HEH I 201: Hematology and Hemostasis I

This course is designed to introduce the students to the principles and concepts of performing basic hematologic procedures performed routinely in the clinical laboratory on blood samples. They will be able to understand the significance of the laboratory findings with reference to the range of the normal hematology values observed in healthy individuals and deviations from it in disease states.

LS-PHL 201: Phlebotomy

This unit introduces the student to the role and duties of the phlebotomist. The basic knowledge of equipment and supplies with study and practice of safety measures required in the performance of phlebotomy is taught in the skills lab. Personal relations with patients, laboratory personnel and physicians will be stressed as well as the importance of professionalism.

LS-PRA I 201: Practicum I

The course is designed to provide practical general training and experiences in the workplace. The student is expected to develop a personal learning plan with the help of the worksite supervisor. The plan relates the workplace training and experiences to the student's general and technical course of study. This course is repeated and the topics and learning outcomes vary with the completion of courses in each preceding semester.

Semester – 5

GE-RMB 101: Research Methods and Biostatistics

This course introduces the basic concepts of Research Methods and Biostatistics. The students learn to compute simple qualitative or quantitative data into meaningful information using statistical techniques and to design a research project.

AH-NDI 201: Nutrition and Diets

This introductory course covers all basic aspects of nutrition from nutrients, guidelines, and assessment to how nutrition affects each aspect of the life cycle. The student will be able to relate the topics and issues like a balanced diet and weight management to their own lives.

AH-HWL 201: Health and Wellness for Life

This course helps the students to improve their health habits and introduces life skills that enhance the quality and longevity of life. The course covers many holistic perspectives of personal health, including physical, emotional, mental, social, environmental and spiritual perspectives with a central theme of self-responsibility for one's behavior.

AH-PHS 201: Professionalism in Health Care Settings

This course focuses on the transferable or "soft skills" rather than on the hands-on technical skills that are needed to be performed by all health professionals in a professional, ethical, legal, and competent manner, regardless of one's job function and position in any type of health care organization to present a professional image and to be successful in his/her job. These generic skills include communicating appropriately, working well with teams, respecting and valuing differences in culture, and interacting effectively with co-workers, patients, visitors and guests.

LS-CLC II 301: Clinical Chemistry II – Assessment of Organ Functions

In this course the student will learn the assessment of the functions of the different organ system through an integrated approach using the knowledge of the normal anatomy and physiology of the organ and pathologic changes to explain the abnormal laboratory findings observed on investigation of the diseases of these organs.

LS-CLI 201: Clinical Immunology

The course helps the student to lay a strong foundation of the knowledge and skills of basic immunologic mechanisms and serologic concepts of procedures commonly performed in the laboratory.

LS-CCL 301: Communication Skills in the Clinical Laboratory

The purpose of this course is to offer students an interactive method of exploring a wide variety of communication interactions in the workplace that occurs between the laboratory professional and their clients/patients, fellow workers, administrators, vendors, other health professionals and others. Role-plays of scenarios faced by the laboratory professionals in their workplace will cover common examples of effective and ineffective communication. This will be followed by a small group discussion by the students. Follow up teacher-led discussions will review the principles of communication for resolving these issues.

LS-BFL 201: Body Fluids

The course introduces the student to laboratory analysis of urine and other body fluids like cerebrospinal fluid, serous fluids, amniotic fluid, synovial fluid and semen in health and disease. Urinalysis also includes structure and function of the kidney and the physical, chemical and microscopic examination of urine.

LS-PRA II 201: Practicum II

The course is designed to provide practical general training and experiences in the workplace. The student is expected to develop a personal learning plan with the help of the worksite supervisor. The plan relates the workplace training and experiences to the student's general and technical course of study. This course is repeated and the topics and learning outcomes vary with the completion of courses in each preceding semester.

Semester – 6

AH-FEP 201: Foundations of Epidemiology

The course introduces the student to the principles and methods of epidemiology. The student will be able to understand the role of epidemiology while studying the impact of both natural and man-made risk factors on human health.

AH-SHC 201: Social Issues in Health Care

The course introduces the students to the social issues that affect the delivery of health care. The student will be guided to read literature available in this regard to understand the inequalities and inadequacies that occur in delivery of health care as a result of social factors that can be addressed by and those that are beyond the control of the individual health professional.

LS-HEH II 301: Hematology and Hemostasis II

Introduction to the theory and practical application of special hematology procedures, both manual and automated; red blood cells and white blood cells, maturation sequences, normal and abnormal morphology and associated diseases.

LS-CLM II 301: Clinical Microbiology II

The student will learn collection and processing of infected samples for laboratory identification of significant isolates. The role of the laboratory findings in the diagnosis of infectious diseases by identification of morphology of microbial agents on microscopy and in colonies supported by biochemical findings will be highlighted. The application of microbial testing in treatment of bacterial, fungal and parasitic diseases will be stressed.

LS-CAS 301: Clerical and Accounting Skills for Laboratory Professionals

This course provides the basic skills necessary for employment in a physician's office or medical clinic. Instruction includes training in basic secretarial, financial, accounting, and receptionist duties, as well as the use of office equipment typically found in a physician's office environment.

LS-BTN 301: Blood Transfusion

This course addresses the fundamental knowledge and skills required by students to work in a blood-banking laboratory. It integrates basic theory (genetics, immunology, and immunohematology) with practical, problem-solving exercises. Clinical scenarios and critical thinking exercises help the students to apply basic concepts to modern transfusion and blood bank settings.

LS-HCG I 301: Histopathology-Cytology and Genetics I

The course has been designed to serve as an introduction to additional special techniques that are performed by highly trained technologists in reference/ research laboratories attached to the hospital clinical laboratory. It also serves to introduce the learner to the concepts and principles of these techniques for application in part II of the course that incorporates advances in existing practice.

LS-PRA III 301: Practicum III

The course is designed to provide practical general training and experiences in the workplace. The student is expected to develop a personal learning plan with the help of the worksite supervisor. The plan relates the workplace training and experiences to the student's general and technical course of study. This course is repeated and the topics and learning outcomes vary with the completion of courses in each preceding semester.

Semester – 7

LS-CLC III 401: Clinical Chemistry III – Special

In this course, the student will study the special clinical chemistry testing performed as part therapeutic drug monitoring, toxicology, diagnosis and treatment of tumors, vitamins and nutritional assessment and inborn errors of metabolism in the pediatric patients and the impact of aging on clinical chemistry testing in the geriatric patients.

LS-MLS 401: Management Skills for the Laboratory Sciences

The course serves to introduce the student to management concepts, techniques, models, and tools and emphasizes the importance of leadership, staff retention, and communication in successful personnel management. The course also focuses on the tools and concepts employed by finance officers that will be useful to understand the basis of planning a budget to contain the cost of the laboratory services provided.

LS-QCA 401: QC and QA in the Clinical Laboratory

This course serves to provide a comprehensive view of the control processes that serve to assure and control the quality of testing of samples submitted to the clinical laboratory. The details of the ongoing inspection of the total testing process will be studied in particular.

LS-CLM III 401: Clinical Microbiology III

The student will learn to use an organ system based approach in the diagnosis of infectious diseases on the basis of microbiology laboratory testing. The application of microbial testing in treatment of systems based bacterial, fungal and parasitic diseases will be stressed emphasized.

LS-TLL 401: Teaching and Learning for Laboratory Professionals

The course focuses on the role of the laboratory professional as educator of patients/clients, staff, and students in both clinical and classroom settings. Key principles of teaching and learning, the characteristics of the learner, and techniques and strategies of teaching and learning will be covered.

LS-HCG II 401: Histopathology - Cytology and Genetics II

The course has been designed to serve as an opportunity to introduce a hands on experience in some additional special techniques that are performed by highly trained technologists in reference/ research laboratories attached to the hospital clinical laboratory. It also serves to introduce the learner to the application of these techniques that may be incorporated in existing practice.

LS-PRA IV 401: Practicum IV

The course is designed to provide practical general training and experiences in the workplace. The student is expected to develop a personal learning plan with the help of the worksite supervisor. The plan relates the workplace training and experiences to the student's general and technical course of study. This course is repeated and the topics and learning outcomes vary with the completion of courses in each preceding semester.

Semester – 8

LS-INR 410: Internship and Research

The course is designed to provide practical general training and experiences in the workplace. The student is expected to work independently in all areas of the laboratory by rotation. The students will be required to work independently with minimal supervision and gain mastery of the procedural skills in clinical chemistry, hematology and hemostasis, microbiology, body fluids, immunology and immunology. They will record the findings and will draft reports for verification of the lab supervisors. They should be able to apply quality control measures throughout the pre-analytical, analytical and post analytical pathway of the sample/analyte being examined or estimated. The student will also perform a research study and submit a project report.

**BACHELOR OF HEALTH SCIENCES –
MEDICAL IMAGING SCIENCES
[BHS-MIS]**

27.0 BACHELOR OF HEALTH SCIENCES - MEDICAL IMAGING SCIENCES [BHS-MIS]

27.1 Overview

Medical Imaging Sciences is a health care profession concerned with imaging the body parts and diagnosing the disorders arising from conditions and diseases occurring throughout the life span.

Radiographers are health care professionals who perform medical imaging procedures utilizing X-ray and magnetic resonance in order to explore the hidden pathology within the body. Radiographer leads the attention into the macro structures such as bone and micro structures such as tissues, nerves etc.

The Medical Imaging technology is rapidly advancing and the radiographers are expected to have a higher level of knowledge and skills needed to meet a new demand for handling advanced and sophisticated equipment to fulfill the professional needs.

The Bachelor of Health Sciences–Medical Imaging Sciences (BHS-MIS) program learning outcomes are aligned to Level 7 of the NQF Emirates (National Qualifications Framework).

27.2 Vision

The holder of BHS-Medical Imaging Sciences program will be a recognized leader in clinically integrated, Medical Imaging Sciences education through collaboration among specialized professionals and institutions, serving diverse student and community populations and the Medical Imaging profession.

27.3 Mission

To advance the profession of Medical Imaging Sciences in the UAE and Middle East by graduating radiographers who demonstrate highly competent performance and professional behaviors in a dynamic health care environment. The graduates will be able to serve the health care needs of society while contributing to the advancement of the profession

27.4 Goals and Objectives

This program has been developed to enable the graduates of the Bachelor of Health Sciences-Medical Imaging Sciences to integrate a broad generic base of knowledge, skills and behaviors common to all health professions while developing technical skills specific to each of the health care major. This will help the graduates to work effectively both as a team member in multi-professional health care delivery teams and in an individual capacity while working in an area of specific technical expertise related to the concentrated area of study.

- Provide broad scientifically strong education in medical imaging that enables the graduates to enter various areas of the profession and adopt to changes that occur in the professional field.
- Maintain standards of education and services in medical imaging.
- Ensure that students acquire specialized knowledge in theoretical and practical aspects of medical imaging, enabling them to apply their professional skills ethically towards the community.
- Create independent, confident, and highly competent radiographers with analytical skills to handle patients in medical imaging department.
- Provide improved health care services autonomously to patients.
- Enable graduates to engage in reflective practice and become lifelong learners.
- Produce graduates with excellent communication skills which will improve the quality of healthcare delivery.
- Open a window to further education in higher levels at local and international Universities.
- Facilitate participation in the process of improving and implementing health care services in UAE in cooperation with public and private sectors.

27.5 Program Learning Outcomes

This Program provides opportunities for students to develop and demonstrate:

(i) Knowledge

On completion of the program, students will be able to:

- A1:** Develop specialized knowledge of medical imaging sciences and related subjects to help them in pursuing a range of medical imaging careers to provide service for the benefit of community & other stakeholders.
- A2:** Demonstrate the knowledge of development of policies and procedures in compliance to national and international agency requirements facilitating the process of delivering Medical Imaging services.
- A3:** Practice principles and theories with best practices in the area of medical imaging sciences which is according to national & international regulations.

(ii) Skills

On completion of this program, students will be able to:

- B1:** Analyze problems and propose solutions demonstrating effective individual, team management and professional skills related to available resources in medical imaging and related areas promoting health services.
- B2:** Select, deploy and conduct appropriate medical imaging procedures and techniques with effective instructions and safety measures for the benefits of the clients.
- B3:** Communicate effectively in oral, written and electronic manner and deploy a range of skills, techniques and strategies within workplace settings in managing cases of varied complexities with conditional autonomy.

(iii) Aspects of Competence

Autonomy and responsibility:

On completion of this program, students will be able to:

- C1a:** Develop creative solutions in addressing responsibilities as a healthcare team leader/player by integrating the latest advances and scientific knowledge that enhance the development of self, peers and subordinates in medical imaging profession.
- C1b:** Act individually as well as part of a medical imaging team to manage professional responsibility of respecting the privacy, confidentiality & safety of patients in a range of contexts.

Role in Context:

On completion of this program, students will be able to:

- C2a:** Demonstrate professional and effective performance in medical imaging services with conditional autonomy.
- C2b:** Outline individual & team objectives and assess their performance at periodic intervals by interacting effectively with professional colleagues and clients comprehending multiple perspectives in a range of settings.

Self-Development:

On completion of this program students, will be able to:

- C3:** Conduct self-evaluation and contribute to development of knowledge, skills and practice to peers by leveraging experiences gained in the area of medical imaging in varied contexts and take responsibility for his/her own future learning needs and professional development in order to handle complex situations in an ethical manner.

27.6 Matrix of Program Learning Outcomes (PLO) aligned with QF Emirates

National Standards of Learning Outcomes for Bachelor Program (UAENQF LEVEL 7)	Learning Outcomes of Bachelor of Health Sciences- Medical Imaging Sciences										
	A1	A2	A3	B1	B2	B3	C1a	C1b	C2a	C2b	C3
I. Knowledge											
Specialized factual and theoretical knowledge and an understanding of the boundaries in a field of work or discipline, encompassing a broad and coherent body of knowledge and concepts, with substantive depth in the underlying principles and theoretical concepts		√	√								
An understanding of allied knowledge and theories in related fields of work or disciplines and in the case of professional disciplines including related regulations, standards, codes, conventions		√	√								
Understanding of critical approach to the creation and compilation of a systematic and coherent body of knowledge and concepts gained from a range of sources			√								
A comprehensive understanding of critical analysis, research systems and methods and evaluative problem-solving techniques		√									
Familiarity with sources of current and new research and knowledge with integration of concepts from outside fields		√	√								
II. Skill											
Technical, creative and analytical skills appropriate to solving specialized problems using evidentiary and procedural based processes in predictable and new contexts that include devising and sustaining arguments associated with a field of work or discipline				√		√					
Evaluating, selecting and applying appropriate methods, procedures or techniques in processes of investigation towards identified solutions evaluating and implementing appropriate research tools and strategies associated with the field of work or discipline					√						

Highly developed advanced communication and information technology skills to present, explain and/or critique complex and unpredictable matters				√		√						
III. Aspects of Competence												
III.a. Autonomy and responsibility												
Can take responsibility for developing innovative and advanced approaches to evaluating and managing complex and unpredictable work procedures and processes, resources or learning							√					√
Can manage technical, supervisory or design processes in unpredictable, unfamiliar and varying contexts												√
Can work creatively and/or effectively as an individual, in team leadership, managing contexts, across technical or professional activities							√	√				√
Can express an internalised, personal view, and accept responsibility to society at large and to socio-cultural norms and relationships							√	√			√	√
III b. Role in context												
Can function with full autonomy in technical and supervisory contexts and adopt para-professional roles with little guidance							√					√
Can take responsibility for the setting and achievement of group or individual outcomes and for the management and supervision of the work of others or self in the case of a specialisation in field of work or discipline							√				√	
Can participate in peer relationships with qualified practitioners and lead multiple, complex groups							√				√	
Can take responsibility for managing the professional development and direct mentoring of individuals and groups							√			√	√	√
Can self-evaluate and take responsibility for contributing to professional practice, and undertake regular professional development and/ or further learning can manage learning							√					√

27.7 Program Learning Outcomes aligned with each course

Course Code	Course Title	Program Learning Outcomes										
		Knowledge			Skill			Aspects of Competence				
		A1	A2	A3	B1	B2	B3	C1a	C1b	C2a	C2b	C3
GE-ENG 101	English Language & Composition						F					
GE-MHP 101	Mathematics for Allied Health Professionals				P							
GE-CCA 101	Computer Concepts and Application	P							P			
GE-GPH 101	General Physics	F										P
AH-CMB 201	Cell and Molecular Biology		P									
AH-CSK 201	Communication Skills for Health Professionals						F					F
AH-HCS 201	Health Care Systems								F	F	P	
GE-GCH 101	General Chemistry	P							P			
GE-USO 101	UAE Society		P					P	P			
GE-IBS 101	Introduction to Behavioral Sciences						F	F			F	F
AH-HAP I 201	Human Body Systems – I		P	P		P	P		P			
AH-HPR 201	Health Professions						F					P
AH-LET 201	Law and Ethics for Health Professionals			P			P	F	F			
AH-CDH 201	Cultural Diversity in Health Care							F		F		
AH-FLS 201	First Aid and Basic Life Support				F		F		P			
GE-ICU 101	Islamic Culture							P	P			
AH-HAP II 202	Human Body Systems - II		P	P		F	F		P			
AH-HIM 201	Introduction to Health Information Management	P						F	P			
IS- RSE 201	Introduction to the Radiological Science and Radiographic Equipment		F	F		F		P	P		P	P
IS- PDR 201	Care of Patient in Diagnostic Radiography	F	F	F		P	F	P	F	P		P

IS- RPH 201	Radiation Physics		F	F				P				
IS- RPR 201	Radiation Protection in Diagnostic Radiography		F	F		F			P			
IS- MIS 201	Mathematics for imaging sciences		P		P				P			
AH-SIC 201	Promotion of Safety and Infection Control			F								
AH-PAP 201	Patho Physiology		P	P	P			P	P			
IS-PHR 202	Pharmacology for radiographers			P	P				P			
IS- IPC 202	Image processing and communication in medical imaging		F			F						
IS- RSP I 202	Radiographic Special Procedures- I	F	F	P	P	F	F	P	P	P	P	P
IS- RGP I 202	Radiographic Positioning-I	F	F	P	P	F	F	P	P	P	P	P
IS- PRA I 202	Practicum I		F	F		F	F		F			P
GE-RMB 101	Research Methods and Biostatistics				F				P			
AH-PHS 201	Professionalism in Health Care Settings			F			F	P		P	P	P
IS- ICE 301	Instrumentation of Conventional X-ray Equipment		F	P		P		P				
IS-ISR 301	Instrumentation of specialized radiographic equipment		F	P		P						
IS- RGP II 301	Radiographic Positioning-II	F	F	P	P	F	F	P	P	P	P	P
IS- RSP II 301	Radiographic Special Procedures- II	F	F	P	P	F	F	P	P	P	P	P
IS- RAB 301	Radiobiology			F								
IS- PRA II 301	Practicum-II		F	F	P	F	F	P	F		P	F
AH-FEP 201	Foundations of Epidemiology	P	F									P
AH-SHC 201	Social Issues in Health Care				P	P		F				
IS- CAT 302	Computed Tomography (CT)	F	F	F	P	F	F	P	P	F	P	P
IS- USG 302	Ultrasonography (USG)	P	P	P	P	P	P	P	P	P	P	P
IS-MRG 302	Basic Concepts of Medicine for the Radiographer			P	P				P			

IS-RAP 302	Radiographic Pathology			P								
IS- PRA III 302	Practicum-III	F	F	F	P	F	F	F	F		P	F
IS-MRI 401	Magnetic Resonance Imaging	F	F	F	P	F	F	P	P	F	P	P
IS-INM 401	Introduction to Nuclear Medicine	F	F	F	P	P	P	P	P	P	P	P
IS-IRT 401	Interventional Radiology Techniques	F	F	F	P	P	P	P	P	P	P	P
IS-MHO 401	Management of Healthcare Organizations for Radiographer	P	F	F	P	P	F	P	F	P	P	
IS- PRA IV 401	Practicum-IV	F	F	F	F	F	F	F	F	P	P	F
IS- INR 410	Internship and Research	F	F	F	F	F	F	F	F	F	F	F

27.8 Program Structure

The Bachelor of Health Sciences – Medical Imaging Sciences [BHS - MIS] is a 4 year / 8 Semester / 128 Credit Hours program offered by College of Allied Health Sciences. This program is based on the universal concept that patient care involves a team approach in which personnel belonging to different professions are gaining importance.

The curriculum includes a combination of courses in General Education, Allied Health Sciences, Biomedical Sciences and Professional courses in Medical Imaging Sciences that focus on imparting knowledge and developing skills to conduct various imaging procedures.

Students who fulfill the graduation requirements and have successfully demonstrated the achievements of all competencies will be awarded the degree of Bachelor of Health Sciences (Medical Imaging Sciences)

The program consists of 128 Credit Hours

Courses	Credit Hours
General Education	21
Allied Health Sciences	29
Professional Courses- Medical Imaging Sciences	78
TOTAL	128

27.9 Plan of Study

Semester – 1

Course Code	Course Title	C H	L H	N L H	Pre-requisites
GE-ENG 101	English Language and Composition	3	3	0	None
GE-MHP 101	Mathematics for Allied Health Professionals	2	2	0	None
GE-CCA 101	Computer Concepts and Application	3	2	2	None
GE-GCH 101	General Chemistry	3	3	0	None
AH-CMB 201	Cell and Molecular Biology	3	3	0	None
AH-CSK 201	Communication Skills for Health Professionals	1	1	0	None
AH-HCS 201	Health Care Systems	1	1	0	None
Semester Credit Hours		16	16	0	

Semester – 2

Course Code	Course Title	C H	L H	N L H	Pre-requisites
GE-GPH 101	General Physics	3	3	0	None
GE-USO 101	UAE Society	1	1	0	None
GE-IBS 101	Introduction to Behavioral Sciences	2	2	0	None
AH-HAP I 201	Human Body Systems I (Anatomy and Physiology)	4	2	4	AH-CMB 201
AH-HPR 201	Health Professions	1	1	0	None
AH-LET 201	Law and Ethics for Health Care Professionals	2	2	0	None
AH-CDH 201	Cultural Diversity in Health Care	1	1	0	None
AH-FLS 201	First Aid and Basic Life Support	2	2	0	None
Semester Credit Hours		16	14	4	

Semester – 3

Course Code	Course Title	C H	L H	N L H	Pre-requisites
GE-ICU 101	Islamic Culture	2	2	0	None
AH-HAP II 202	Human Body Systems – II (Anatomy and Physiology)	4	2	4	AH-HAP I 201
AH-HIM 201	Introduction to Health Information Management	1	1	0	None

IS- RSE 201	Introduction to the Radiological Science and Radiographic Equipment	2	2	0	AH-HAP I 201
IS- PDR 201	Care of Patient in Diagnostic Radiography	2	2	0	None
IS- RPH 201	Radiation Physics	1	1	0	GE-GPH 101
IS- RPR 201	Radiation Protection in Diagnostic Radiography	2	2	0	None
IS- MIS 201	Mathematics for Imaging Sciences	2	2	0	GE-MHP 101
Semester Credit Hours		16	14	4	

Semester – 4

Course Code	Course Title	C H	L H	N L H	Pre-requisites
AH-PAP 201	Patho Physiology	3	3	0	AH-HAP II 202
AH-SIC 201	Promotion of Safety and Infection Control	3	2	2	None
IS-PHR 202	Pharmacology for Radiographers	2	2	0	None
IS- IPC 202	Image Processing and Communication in Medical Imaging	2	2	0	None
IS- RSP I 202	Radiographic Special Procedures- I	2	1	2	None
IS- RGP I 202	Radiographic Positioning-I	2	1	2	AH-HAP II 202
IS- PRA I 202	Practicum I	3	0	6	None
Semester Credit Hours		17	11	12	

Semester – 5

Course Code	Course Title	C H	L H	N L H	Pre-requisites
GE-RMB 101	Research Methods and Biostatistics	2	2	0	GE-MHP 101
AH-PHS 201	Professionalism in Health Care Settings	1	1	0	None
IS- ICE 301	Instrumentation of Conventional X-ray Equipment	2	2	0	IS- RPH 201
IS-ISR 301	Instrumentation of Specialized Radiographic Equipment	1	1	0	IS- RPH 201
IS- RGP II 301	Radiographic Positioning-II	2	1	2	IS- RGP I 202
IS- RSP II 301	Radiographic Special Procedures- II	2	1	2	IS- RSP I 202

IS- RAB 301	Radiobiology	1	1	0	AH-CMB 201
IS- PRA II 301	Practicum-II	4	0	8	IS-PRA I 202
Semester Credit Hours		15	9	12	

Semester – 6

Course Code	Course Title	C H	L H	N L H	Pre-requisites
AH-FEP 201	Foundations of Epidemiology	1	1	0	AH-SIC 201
AH-SHC 201	Social Issues in Health Care	1	1	0	None
IS- CAT 302	Computed Tomography (CT)	3	2	2	None
IS- USG 302	Ultrasonography (USG)	3	2	2	None
IS-MRG 302	Basic Concepts of Medicine for the Radiographer	1	1	0	None
IS-RAP 302	Radiographic Pathology	2	2	0	AH-PAP 201
IS- PRA III 302	Practicum-III	5	0	10	IS-PRA II 301
Semester Credit Hours		16	9	14	

Semester – 7

Course Code	Course Title	C H	L H	N L H	Pre-requisites
IS-MRI 401	Magnetic Resonance Imaging (MRI)	3	2	2	None
IS-INM 401	Introduction to Nuclear Medicine	2	1	2	None
IS-IRT 401	Interventional Radiology Techniques	2	1	2	None
IS-MHO 401	Management of Healthcare Organizations for Radiographer	1	1	0	None
IS- PRA IV 401	Practicum-IV	8	0	14	IS- PRA III 302
Semester Credit Hours		16	5	20	

Semester – 8

Course Code	Course Title	C H	L H	N L H	Pre-requisites
IS- INR 410	Internship and Research	16	0	32	<i>All Courses from Semester 1 to 7</i>
Semester Credit Hours		16	0	32	
Total Credit Hours		128			

27.10 Course Description

Semester – 1

GE-ENG 101: English Language and Composition

The course provides an intensive instruction in the writing process focusing on the organization of ideas in well-developed expository and argumentative essays with some emphasis on developing vocabulary and writing the examination answer. In the process the student will be able to document their clinical encounters and their learning effectively.

GE-MHP 101: Mathematics for Allied Health Professionals

This is a basic level course which reviews the concepts of mathematics that has application in health care settings while performing different procedures. The basic of statistics and logarithm is dealt with in this course which will improve the computational skills of health professionals.

GE-CCA 101: Computer Concepts and Application

This course is an introduction to the most common software applications of computers and includes "hands-on" use of microcomputers and some of the major commercial software. These software packages shall include typical features of office suites, such as word processing, spreadsheets, database systems, and other features found in current software packages.

GE-GCH 101: General Chemistry

The course covers topics related to the different chemical reactions, measurements and figures, electronic structures and periodicity; chemical bonding, molecular forms, intermolecular bonding and forces are also discussed in addition to the physical and chemical properties.

AH-CMB 201: Cell and Molecular Biology

The course provides an overview of the organization, function, and regulation of the eukaryotic cell. The cell as a basic unit of life is dealt with extensively at the structural, functional and molecular levels. A concrete learning experience is provided in the laboratory. The course lays foundation to the understanding of the human body systems and the human body as a whole.

AH-CSK 201: Communication Skills for Health Professionals

The course introduces the student to the principles of communication that enhance interpersonal communication between self and other individuals in small and large group settings. Examples from hospital settings will help the learners to visualize themselves in

their future roles; lay emphasis to the increasing importance of communication between patient/client and care providers; and the connection between communication practices and quality patient care outcomes.

AH-HCS 201: Health Care Systems

This course deals with making the students aware of the important factors that influence today's health care services. A comparison of national and international health care systems is made to highlight the disparities in health care delivery based on health care economics. Health care for designated populations such as ambulatory clients, long term care clients & mental health clients will be highlighted.

Semester – 2

GE-GPH 101: General Physics

This is an introductory course that includes the study of mechanics, thermo-dynamics, vibrations and wave motions. It is a fundamental course and a basic one for health professional students. Examples of application in clinical laboratory services shall increase the relevance of this foundational course.

GE-USO 101: UAE Society

This course focuses on the unique nature of the UAE society and its political, geographical, cultural, demographical, and social aspects. It highlights the Emirati perspective of contemporary global changes. This course allows the students to explore the Emirati society in global context.

GE-IBS 101: Introduction to Behavioral Sciences

The course is designed to give an overview of the main topics in general psychology and sociology including biological basis of behavior, mental processes: sensation and perception: learning, motivation, intelligence, human development, personality and behavioral disorders, socialization and social environment contributing to human behavior.

AH-HAP I 201: Human Body Systems I (Anatomy and Physiology)

The first part of the 2-semester course is designed to introduce the student to the major organs and tissues that form the human body systems including body planes, directions and cavities, Integumentary, Skeletal, Muscular and Nervous Systems and Special Senses. This will be done through didactic sessions in the multimedia labs with opportunities for interactive learning activities. The Gross Anatomy Laboratory sessions will use models and manikins as well as plastinated body parts to make the learning a truly concrete experience.

AH-HPR 201: Health Professions

The students will be introduced to the different health professions. The course provides opportunities to explore the nature of all the major health professions. The training requirement, job responsibilities, and employment opportunities of each will be compared. The challenges of meeting the growing demands of health care and the shortfall in workforce numbers will be discussed.

AH-LET 201: Law and Ethics for Health Care Professionals

In this course the student will learn the legal and ethical concepts of healthcare, review the basic principles of ethics and law and discuss how law and ethics are involved in all decisions made in health care settings in the set of case studies provided.

AH-CDH 201: Cultural Diversity in Health Care

The course deals with the diversity of patient/client populations that the healthcare professionals serve due to increasing globalization. In UAE the expatriate population forms 70-80% of the population made up of people from different countries and 20-30% of Emiratis. The course will highlight the factors that make individuals unique. The course will also highlight how these differences disappear when we learn to respect cultural diversity.

AH-FLS 201: First Aid and Basic Life Support

This course is an essential for all students pursuing a health professional career. The course introduces them to the proper techniques of administering first aid limited to bleeding, shock, poisoning, burns, heat and cold exposure, bone and joint injuries and sudden illness. Methods of cardiopulmonary resuscitation for infants, children, adults and choking victims are also covered in this course.

Semester - 3

GE-ICU 101: Islamic Culture

The course aims to introduce the learner to the concepts and beliefs in Islam that form the basis of Islamic culture. The students are expected to identify the differences, values, and preferences in Islamic culture with the existing ones. The course consists of a general review of Islam as a religion and as an approach to life.

AH-HAP II 202: Human Body Systems II (Anatomy and Physiology)

The second part of the 2-semester course is designed to introduce the student to the major organs and tissues that form the human body systems including, Circulatory, Lymphatic, Respiratory, Digestive, Urinary, Endocrine and Reproductive Systems and common tests and procedures specific to the organ systems. This will be done through didactic sessions in the

multimedia labs with opportunities for interactive learning activities. The Gross Anatomy Laboratory sessions will use models and manikins as well as plastinated body parts to make the learning a truly concrete experience.

AH-HIM 201: Introduction to Health Information Management

An introductory course with emphasis on the basics of data generated during the delivery of care for patients/clients by individuals directly involved in health management or indirectly involved when pursuing a career in a health related activity. The course will provide an overview of the health information generated in this process to understand the current trends in the management of information from the time it is entered into patient's medical records and until it is subsequently used for the purpose of billing and reimbursement, quality assurance, health surveys for accreditation, research and in developing or changing health policies. During the practicum, the use of information management systems and the protection of the health information will be emphasized.

IS-RSE 201: Introduction to Radiological Science and Radiographic Equipment

This course introduces the profession of radiography, healthcare team and the hospital environment to the student. This course is designed to impart the basic knowledge of different modalities used in medical imaging for diagnosis.

IS-PDR 201: Care of Patient in Diagnostic Radiography

The course deals with the management of a patient physically and mentally in a way which is very convenient to the patient and radiographer. It provides information regarding management of emergency patient in different condition, moving and handling of trauma patients, isolated patients and aged patients. The course discusses about the global standards of infection control, isolation technique and emergency protocols in various conditions.

IS-RPH 201: Radiation Physics

The student understands the physics of production of X rays. The course includes information related to understanding the relationship between mass and energy, structure of atom, electromagnetic radiation, devices working on magnetic properties, devices working on electricity, radioactivity and quality or intensity of X rays.

IS-RPR 201: Radiation Protection in Diagnostic Radiography

This course deals with developing knowledge related to protecting self, clients and public against the effects of radiation. The course will also discuss the global standards of protection forwarded by the state and federal regulatory agencies on radiation safety.

IS-MIS 201: Mathematics for Imaging Sciences

The course reviews the concepts and use of number system, linear functions and trigonometry. This course introduces the concepts of natural logarithm, sets, matrices and vectors, limits and derivatives. Differentiation, Integration, their applications, areas under curves, mean value theorem and interpolation are introduced in the course which could help in analyzing and interpreting the techniques in imaging sciences.

Semester - 4

AH-SIC 201: Promotion of Safety and Infection Control

The course has two basic themes: promotion of safety and infection control. The first part will lay emphasis on hazardous physical and chemical agents that affect health of the worker and the patient/client in health care settings. The second part deals with infectious agents and the risk of transmission of infections due to lapses in observation of standard precautions on the part of health professionals. Field visits to the hospital and demonstrations in the skills laboratory will form a vital part of the learning experience.

AH-PAP 201: Patho Physiology

This course introduces the students to the study of causes and mechanisms of diseases. The responses to injury are dealt first at the cellular level followed by changes at the level of tissues and organs. The topics include cellular pathology, inflammation and tissue repair, hemodynamic, genetic and immune disorders, neoplasia, disorders of nutrition and environmental pathology. The students then learn to apply the concepts of disease mechanisms in the setting of each organ system. The underlying pathologic basis of systemic diseases will be dealt extensively.

IS-PHR 202: Pharmacology for Radiographers

This course presents basic pharmacologic principles along with the mechanism of action and side effects of drugs commonly used in medical imaging practice. The lessons are organized using a systems approach and will deal with the pathophysiology of altered body functions and discuss the drug groups used for treatment. Case studies will be used to discuss how drugs affect medical intervention and how host factors may affect drug effectiveness.

IS-IPC 202: Image processing and Communication in Medical Imaging

Image processing is one of the core subjects for imaging sciences student. In this course various aspects of conventional and advanced image processing techniques are taught. It also deals with the information regarding the various steps involved in the computerized and digital radiography.

IS-RSP I 202: Radiographic Special Procedures I

This course presents the student with guidelines on working knowledge of various radiological procedures like Intravenous Urogram, Barium studies, Endoscopic Retrograde Cholangiopancreatography (ERCP) and Percutaneous Transhepatic Biliary Drainage (PTBD) that are routinely performed in medical imaging. The course will highlight on the details of each procedure and also deals with the indications, contra indications, techniques and problems related to individual procedures.

IS-RGP I 202: Radiographic Positioning I

This course deals with the knowledge of the procedure for examination of X ray, preparation of room, instruments, apparatus, patient preparation and positioning, use of accessories, relevant exposure factors etc. More focus will be given to incorporate practical and theory works and emphasis will be placed on to understand the anatomical and physiological basis of radiographic procedure.

This course includes terminology, principles, and procedures involved in routine radiographic positioning for demonstration of the chest, abdomen, upper extremities, digestive system, and urinary system.

IS-PRA I 202: Practicum I

This course is the first of a series of four clinical practicum courses, which provides clinical experiences, as the student is trained to develop basic skills in radiographic positioning for X rays of chest, abdomen, upper extremities, digestive system, urinary system. Student will also gain exposure in the conduction of special procedures like intravenous Urogram, Barium studies, and Percutaneous Trans hepatic Cholangiogram. During these postings students will be trained to carry out and assist in simple imaging procedures under direct supervision of a clinical faculty member.

Semester - 5

GE-RMB 101: Research Methods and Biostatistics

This course introduces the basic concepts of Research Methods and Biostatistics. The students learn to compute simple qualitative or quantitative data into meaningful information using statistical techniques and to design a research project.

AH-PHS 201: Professionalism in Health Care Settings

This course focuses on the transferable or "soft skills" rather than on the hands-on technical skills that are needed to be performed by all health professionals in a professional, ethical, legal, and competent manner, regardless of one's job function and position in any type of health care organization to present a professional image and to be successful in his/her job. These generic skills include communicating appropriately, working well with teams,

respecting and valuing differences in culture, and interacting effectively with co-workers, patients, visitors and guests.

IS-ICE 301: Instrumentation of Conventional X-ray Equipment

This course presents the student with the basic knowledge of the conventional equipment used in radiology department and also skills to perform quality control protocols. The course deals with the knowledge related to X-ray circuits, concepts of electricity and magnetism as applied to construction and operation of the X-ray machine and factors and interactions involved in X-ray production.

IS-ISR 301: Instrumentation of Specialized Radiographic Equipment

This course introduces the basic knowledge related to advanced technological equipment in the field of medical imaging including digital radiography, computer radiography, picture archiving and communication system and special imaging techniques. This course will also explore the components, principles, operations and quality control of digital imaging systems. Factors that impact image acquisition, display, archiving and retrieval are discussed.

IS-RGP II 301: Radiographic Positioning II

The student should be made familiar with the positioning criteria and radiographic technique for each body part and moving and handling of patients in various conditions especially patient with trauma. Also, the student should be familiar with the radiographic appearance of normal anatomy and common abnormal conditions where elementary knowledge of pathology can be applied to get the clinical diagnosis by applying proper radiation protection measures.

IS-RSP II 301: Radiographic Special Procedures II

This course presents the student with guidelines on working knowledge of different radiological procedures like vascular interventional angiography, non-vascular interventional radiology, cardiac interventional angiography and routine procedures like Dacrocystography, Sialography, Fallopian Tube Recanalization and Hysterosalpingography. The course will highlight on the details of each procedure and also deals with the indications, contra indications, techniques and problems related to these procedures.

IS-RAB 301: Radiobiology

This course presents the student to understand the biological effects of ionizing radiation at the cellular level, somatic and genetic effects of radiation exposure and to correlate the knowledge of radiation protection to minimize these effects. This course deals with the theories and principles of the interaction of ionizing radiation with living systems. Student

will also learn about various factors involved in the acute and long term effects of radiation on biological molecules and organisms.

IS-PRA II 301: Practicum II

This course is the second of a series of four clinical practicum courses, which provides clinical experiences, as the student is trained to develop basic skills in radiographic positioning for X rays of skull, lower extremities, spine and Pediatric radiography. Student will also gain exposure in the conduction of special procedures like vascular interventional angiography, Non vascular interventional radiology, Cardiac interventional angiography, Dacrocystography, Sialography, Fallopian Tube Recanalization and Hysterosalpingography. During these postings, students will be trained to carry out simple nursing procedures and assist in treatments under direct supervision of a clinical faculty.

Semester - 6

AH-FEP 201: Foundations of Epidemiology

The course introduces the student to the principles and methods of epidemiology. The student will be able to understand the role of epidemiology while studying the impact of both natural and man-made risk factors on human health.

AH-SHC 201: Social Issues in Health Care

The course introduces the students to the social issues that affect the delivery of health care. The student will be guided to read literature available in this regard to understand the inequalities and inadequacies that occur in delivery of health care as a result of social factors that can be addressed by and those that are beyond the control of the individual health professional.

IS-CAT 302: Computed Tomography

This course is designed to introduce the basic concepts of the functioning and conduction of Computed Tomography within the standards. This course aims at developing the knowledge and gaining the skills related to Computed Tomography. This course serves as an initial platform to persons who would aspire to work in the field of Computed Tomography.

IS-USG 302: Course Title: Ultrasonography

This course is designed to introduce the basic concepts of the functioning and conduction of Ultrasonography within the standards. This course aims at developing the knowledge and gaining the skills related to Ultrasonography. This course serves as an initial platform to persons who would aspire to work in the field of Ultrasonography.

IS-MRG 302: Basic Concepts of Medicine for the Radiographer

This course presents the student with a basic knowledge of the commonly seen medical conditions specific to the field of medicine and ENT. Also the student is presented with the basic concepts of forensic medicine related to the medico legal aspects of imaging modalities. This course also provides knowledge, skills and behavioral attitudes that may enable an imaging sciences professional to function effectively as a primary care radiographer in a hospital set up.

IS-RAP 302: Radiographic Pathology

This course provides the guidelines for the radiographic student with a basic knowledge of pathological changes of a disease, which mainly include cell injury and adaptation, inflammation and repair, fluid and hemodynamic derangements, neoplasia, infectious diseases and diseases of white cell and lymph nodes.

IS-PRA III 302: Practicum III

This course is the third of a series of four clinical practicum courses, which provides clinical experiences, as the student is trained to develop basic skills in positioning that will demonstrate the knowledge of clinical application of ultrasonography and computer tomography. During these postings, students will be trained to carry out imaging procedures under direct supervision of a clinical faculty.

Semester – 7

IS-MRI 401: Magnetic Resonance Imaging

This course is designed to introduce the basic concepts of the functioning and conduction of Magnetic Resonance Imaging within the standards. Magnetic Resonance Imaging deals with the scanning of hydrogen protons within the body to get a superior soft tissue resolution of a particular anatomical part and has superior importance in diagnostic imaging. This course aims at developing the knowledge and gaining the skills related to Magnetic Resonance Imaging. This course serves as an initial platform to persons who would aspire to work in the field of Magnetic Resonance Imaging.

IS-INM 401: Introduction to Nuclear Medicine

This course is designed to introduce the basic concepts of the functioning and conduction of nuclear medicine techniques within the standards. This course aims at developing the knowledge and gaining the skills related to nuclear medicine radiology techniques. This course serves as an initial platform to persons who would aspire to work in the field of nuclear medicine techniques. This course deals with the basic concepts of medical

specialty which involves the application of radioactive substances in the diagnosis and treatment of disease.

IS-IRT 401: Interventional Radiology Techniques

This course is designed to introduce the basic concepts of the functioning and conduction of interventional radiology techniques within the standards. This course aims at developing the knowledge and gaining the skills related to interventional Radiology techniques. This course serves as an initial platform to persons who would aspire to work in the field of interventional radiology techniques.

IS-MHO 401: Management of Healthcare Organizations for Radiographer

This course focuses on leadership and management issues in health care organizations while providing students with a practice setting to examine and develop their own management skills related to imaging sciences. The course aims at developing management and leadership skills of the radiographer at the workplace for personal and professional performance in patient care.

IS-PRA IV 401: Practicum IV

This course is the fourth of a series of four clinical practicum courses, which provides clinical experiences, as the student is trained to develop basic skills in positioning for demonstration of the knowledge of clinical application of magnetic resonance imaging, nuclear medicine imaging and interventional angiographic protocol. During these postings students will be trained to carry out imaging procedures under direct supervision of a clinical faculty.

Semester – 8

IS-INR 410: Internship and Research

The course is designed to provide practical training and experiences in the workplace. The student is expected to work independently in all areas of the department of radio diagnosis on rotation. The students will be required to work independently with minimal supervision and gain mastery of the procedural skills in radiography, radiological special procedures, magnetic resonance imaging, computed tomography scan, nuclear medicine and interventional radiology. They will perform the routine radiographic positioning and standard protocols for other imaging modalities and will report for verification to the clinical supervisors. They should be able to perform the quality control protocol for each modality on a daily routine procedure. The student will also conduct a research study and submit a project report.

**BACHELOR OF HEALTH SCIENCES –
ANAESTHESIA & SURGICAL
TECHNOLOGY [BHS-AST]**

28.0 BACHELOR OF HEALTH SCIENCES-ANESTHESIA & SURGICAL TECHNOLOGY [BHS-AST]

28.1 Overview

The Bachelor of Health Science - Anesthesia and Surgical Technology is a four year bachelor program that aims at developing health professionals competent to work in multi-disciplinary health care settings with skills specific to anesthesia and surgical technology.

Anesthesia and surgical technicians are commonly referred to as operating room technicians who assist in conducting different surgeries safely. Students enrolled in this major will be able to develop appropriate knowledge and training required to work under an anesthesiologist as a vital member of the anesthesia care team, typically in an emergency, operating or delivery room. He/she as an integral member of the surgical team will work closely with surgeons, registered nurses and other surgical personnel in the delivery of patient care before, during, and after surgery.

The Bachelor of Health Sciences– Anesthesia and Surgical Technology (BHS-AST) program learning outcomes are aligned to Level 7 of the NQF Emirates (National Qualifications Framework).

28.2 Vision

The anesthesia and surgical technologist will be a highly competent graduate, dedicated to serve the needs of diverse population who will be recognized as a leader and role model for anesthesia and surgical technology profession.

28.3 Mission

The mission of this program is to advance the profession of Anesthesia and Surgical Technology in UAE and Middle East so as to ensure optimum academic and clinical success and to promote excellence in the field. It provides quality education based on specialized knowledge; evidence based, sound research and technologically superior clinical environment.

28.4 Goals and Objectives

Goal:

The program of Bachelor of Health Sciences-Anesthesia and Surgical Technology prepares competent graduates with cognitive (knowledge), psychomotor (skills) and affective (behavior) to work effectively as an Anesthesia and Surgical technologist and become a contributing team member in the Operation Theatre. The program aims in imparting technical competence to become a vital member of the multidisciplinary surgical workforce.

Objectives:

On successful completion of the BHS-Anesthesia and Surgical Technology, the student should be able to:

1. Integrate specialized knowledge and skills to become competent entry level Anesthesia and Surgical Technologist.
2. Demonstrate skills in planning and preparing patients for anesthesia
3. Develop skills to assist in major and minor surgical procedures using latest technology.
4. Demonstrate knowledge and skills to maintain aseptic environment in Operation theatre.
5. Apply knowledge and skills in assessment, prevention and management of surgical emergencies.
6. Demonstrate application of knowledge related to workplace and patient safety.
7. Demonstrate leadership and management skills in maintaining the operation theatre protocols and procedures.
8. Practice within prescribed ethical and legal standards of the profession.
9. Prepare, handle and maintain surgical and diagnostic equipment's.
10. Establish and maintain effective interpersonal relationships in the surgical environment.
11. Adapt constantly to advances in anesthesia and surgical technology at the workplace.

28.5 Program Learning Outcomes

This Program provides opportunities for students to develop and demonstrate:

(i) Knowledge

On completion of the program students will be able to:

- A1: Demonstrate specialized knowledge of AST and related subjects to help pursue and excel in the profession.
- A2: Apply comprehensive knowledge in managing surgical clients by utilizing anatomy, physiology and pathology related to surgical treatment modality.
- A3: Integrate the basic and appropriate clinical and surgical knowledge related to surgical procedures, surgical instruments, supplies and equipment's pertinent to perioperative practices, research and advancements.

(ii) Skills

On completion of this program students will be able to:

- B1: Demonstrate competency in practice of anesthesia and surgical technology in compliance with national and international standards of practice.

- B2: Demonstrate skills in handling surgical instruments, supplies and equipment's guided by the principles of asepsis to provide optimal patient care in the operating room.
- B3: Apply effective communication skills and group dynamics with patients/clients, surgical team members, other health care professionals and community.
- B4: Perform efficiently in administration of medication and therapeutic regime utilizing the knowledge of pharmacology in the surgical care management.
- B5: Demonstrate skills in assisting and managing emergencies or any complications that arise during perioperative routines and procedures integrating evidence based practice.

(iii) Competencies – Autonomy and Responsibility, Self-Development, Role in Context

Autonomy and responsibility:

On completion of this program, students will be able to:

- C1a: Maintain confidentiality in handling surgical data, informatics, legal and ethical issues encountered during delivery of health care incorporating the concept of team-based care.
- C1b: Implement patient safety, quality care and professional guidelines in maintaining the standards in compliance with patients/clients, other health care workers, families and communities to ensure optimal health outcomes.

Role in Context:

On completion of this program, students will be able to:

- C2: Demonstrate cultural diversity in care embedded with values, accountability and moral integrity related to patient, surgical team and inter-professional team functioning to maximize quality and safe patient care.

Self-Development:

On completion of this program, students will be able to:

- C3: Contribute and participate in self-evaluation and professional development, constantly adapting advancement in learning tasks and technology, utilizing various educational pursuits in the field of anesthesia and surgical technology embracing ethical standard

28.6 Matrix of Program Learning Outcomes (PLO) aligned with QF Emirates

National Standards of Learning Outcomes for Bachelor Program (UAENQF LEVEL 7)	Learning Outcomes of Bachelor of Health Sciences- Anesthesia and Surgical Technology											
	A1	A2	A3	B1	B2	B3	B4	B5	C1 a	C1 b	C 2	C 3
I. Knowledge												
Specialized factual and theoretical knowledge and an understanding of the boundaries in a field of work or discipline, encompassing a broad and coherent body of knowledge and concepts, with substantive depth in the underlying principles and theoretical concepts	√											
An understanding of allied knowledge and theories in related fields of work or disciplines and in the case of professional disciplines including related regulations, standards, codes, conventions	√	√										
Understanding of critical approach to the creation and compilation of a systematic and coherent body of knowledge and concepts gained from a range of sources	√											
A comprehensive understanding of critical analysis, research systems and methods and evaluative problem-solving techniques			√									
Familiarity with sources of current and new research and knowledge with integration of concepts from outside fields			√									
II. Skill												
Technical, creative and analytical skills appropriate to solving specialized problems using evidentiary and procedural based processes in predictable and new contexts that include devising and sustaining arguments associated with a field of work or discipline				√	√							
Evaluating, selecting and applying appropriate methods, procedures or techniques in processes of investigation towards identified solutions evaluating and implementing appropriate research tools and strategies associated with the field of work or discipline				√	√			√				
Highly developed advanced communication and information technology skills to present, explain and/or critique complex and unpredictable matters						√		√				

III. Aspects of Competence												
III.a. Autonomy and responsibility												
Can take responsibility for developing innovative and advanced approaches to evaluating and managing complex and unpredictable work procedures and processes, resources or learning									√			√
Can manage technical, supervisory or design processes in unpredictable, unfamiliar and varying contexts									√			
Can work creatively and/or effectively as an individual, in team leadership, managing contexts, across technical or professional activities										√		
Can express an internalised, personal view, and accept responsibility to society at large and to socio-cultural norms and relationships										√	√	
III b. Role in context												
Can function with full autonomy in technical and supervisory contexts and adopt para-professional roles with little guidance											√	
Can take responsibility for the setting and achievement of group or individual outcomes and for the management and supervision of the work of others or self in the case of a specialisation in field of work or discipline											√	√
Can participate in peer relationships with qualified practitioners and lead multiple, complex groups											√	
Can take responsibility for managing the professional development and direct mentoring of individuals and groups											√	
III c. Self-development												
Can self-evaluate and take responsibility for contributing to professional practice, and undertake regular professional development and/ or further learning can manage learning												√
Can manage learning tasks independently and professionally, in complex and sometimes unfamiliar learning contexts												√
Can contribute to and observe ethical standard												√

28.7 Program Learning Outcomes aligned with each course

Course Code	Course Title	Program Learning Outcomes										
		Knowledge			Skill			Aspects of Competence				
		A1	A2	A3	B1	B2	B3	C1a	C1b	C2a	C2b	C3
GE-ENG 101	English Language & Composition						F					
GE-MHP 101	Mathematics for Allied Health Professionals				P							
GE-CCA 101	Computer Concepts and Application	P							P			
GE-GCH 101	General Physics	F										P
AH-CMB 201	Cell and Molecular Biology		P									
AH-CSK 201	Communication Skills for Health Professionals						F					F
AH-HCS 201	Health Care Systems								F	F	P	
GE-GPH 101	General Chemistry	P							P			
GE-USO 101	UAE Society		P					P	P			
GE-IBS 101	Introduction to Behavioral Sciences						F	F			F	F
AH-HAP I 201	Human Body Systems – I		P	P		P	P		P			
AH-HPR 201	Health Professions						F					P
AH-LET 201	Law and Ethics for Health Professionals			P			P	F	F			
AH-CDH 201	Cultural Diversity in Health Care							F		F		
AH-FLS 201	First Aid and Basic Life Support				F		F		P			
GE-ICU 101	Islamic Culture							P	P			
AH-HAP II 202	Human Body Systems - II		P	P		F	F		P			
AH-HIM 201	Introduction to Health Information Management	P						F	P			
AH-LSD 201	Introduction to the Radiological Science and Radiographic Equipment		F	F		F		P	P		P	P

AS- IST 201	Care of Patient in Diagnostic Radiography	F	F	F		P	F	P	F	P		P
AS- BDP 201	Radiation Physics		F	F				P				
AS- SIE 201	Radiation Protection in Diagnostic Radiography		F	F		F			P			
AH- EPH 201	Mathematics for Imaging Sciences		P		P				P			
AH-SIC 201	Promotion of Safety and Infection Control			F								
AH-PAP 201	Patho Physiology		P	P	P			P	P			
AH-PTH 201	Pharmacology for Radiographers			P	P				P			
AS- SMI 202	Image Processing and Communication in Medical Imaging		F			F						
AS- SPH 301	Radiographic Special Procedures- I	F	F	P	P	F	F	P	P	P	P	P
AS- SPI 202	Radiographic Positioning-I	F	F	P	P	F	F	P	P	P	P	P
AH-NDI 201	Practicum I		F	F		F	F		F			P
GE-RMB 101	Research Methods and Biostatistics				F				P			
AH-HWL 201	Professionalism in Health Care Settings			F			F	P		P	P	P
AH-PHS 201	Instrumentation of Conventional X-ray Equipment		F	P		P		P				
AS- SWO 301	Instrumentation of Specialized Radiographic Equipment		F	P		P						
AS- HES 401	Radiographic Positioning-II	F	F	P	P	F	F	P	P	P	P	P
AS- PCS 202	Radiographic Special Procedures- II	F	F	P	P	F	F	P	P	P	P	P
AS- ICS 301	Radiobiology			F								
AS- PCS 302	Practicum-II		F	F	P	F	F	P	F		P	F
AH-FEP 201	Foundations of Epidemiology	P	F									P
AH-SHC 201	Social Issues in Health Care				P	P		F				
AS- AAM 302	Computed Tomography (CT)	F	F	F	P	F	F	P	P	F	P	P
AS- GSP 302	Ultrasonography (USG)	P	P	P	P	P	P	P	P	P	P	P

AS- OSP 301	Basic Concepts of Medicine for the Radiographer			P	P				P			
AS- ASP 301	Radiographic Pathology			P								
AS- OSP 302	Practicum-III	F	F	F	P	F	F	F	F		P	F
AS- OTS 302	Magnetic Resonance Imaging	F	F	F	P	F	F	P	P	F	P	P
AS- PRA I 302	Introduction to Nuclear Medicine	F	F	F	P	P	P	P	P	P	P	P
AS- PRS 401	Interventional Radiology Techniques	F	F	F	P	P	P	P	P	P	P	P
AS- OMS 302	Management of Healthcare Organizations for Radiographer	P	F	F	P	P	F	P	F	P	P	
AS- ORS 401	Practicum-IV	F	F	F	F	F	F	F	F	P	P	F
AS- CVS 401	Internship and Research	F	F	F	F	F	F	F	F	F	F	F

28.8 Program Structure

The Bachelor of Health Sciences – Anesthesia and Surgical Technology [BHS- AST] is a 4 year / 8 Semester / 128 Credit Hours program offered by College of Allied Health Sciences. This program is based on the universal concept that patient care involves a team approach in which personnel belonging to different professions are gaining importance.

The curriculum includes a combination of courses in General Education, Allied Health Sciences, Biomedical Sciences and Professional courses in Anesthesia and Surgical Technology that focus on imparting knowledge and developing skills to perform various tasks including preparation of operating room, organization and maintenance of instruments and equipment and replenishment of supplies that are related to general surgeries and anesthesia.

Students who fulfill the graduation requirements and have successfully demonstrated the achievements of all competencies will be awarded the degree of Bachelor of Health Sciences (Anesthesia and Surgical Technology).

The program consists of 128 Credit Hours

Courses	Credit Hours
General Education	21
Allied Health Sciences	36
Professional Courses - Anesthesia and Surgical Technology	71
TOTAL	128

28.9 Plan of Study

Semester – 1

Course Code	Course Title	C H	L H	N L H	Pre-requisites
GE-ENG 101	English Language and Composition	3	3	0	None
GE-MHP 101	Mathematics for Allied Health Professionals	2	2	0	None
GE-CCA 101	Computer Concepts and Application	3	3	0	None
GE-GCH 101	General Chemistry	3	3	0	None
AH-CMB 201	Cell and Molecular Biology	3	3	0	None
AH-CSK 201	Communication Skills for Health Professionals	1	1	0	None
AH-HCS 201	Health Care Systems	1	1	0	None
Semester Credit Hours		16	16	0	

Semester – 2

Course Code	Course Title	C H	L H	N L H	Pre-requisites
GE-GPH 101	General Physics	3	3	0	None
GE-USO 101	UAE Society	1	1	0	None
GE-IBS 101	Introduction to Behavioral Sciences	2	2	0	None
AH-HAP I 201	Human Body Systems – I (Anatomy and Physiology)	4	2	4	AH-CMB 201
AH-HPR 201	Health Professions	1	1	0	None
AH-LET 201	Law and Ethics for Health Care Professionals	2	2	0	None
AH-CDH 201	Cultural Diversity in Health Care	1	1	0	None
AH-FLS 201	First Aid and Basic Life Support	2	2	0	None
Semester Credit Hours		16	14	4	

Semester – 3

Course Code	Course Title	C H	L H	N L H	Pre-requisites
GE-ICU 101	Islamic Culture	2	2	0	None
AH-HAP II 202	Human Body Systems – II (Anatomy and Physiology)	4	2	4	AH-HAP I 201
AH-HIM 201	Introduction to Health Information Management	1	1	0	None
AH-LSD 201	Lifespan Development	2	2	0	AH-HAP I 201
AS-IST 201	Introduction to Surgical Technology	2	2	0	None

AS- BDP 201	Biomedicine and Diagnostic Procedures	2	1	2	GE-GPH 101
AS- SIE 201	Surgical Instruments, Supplies and General Equipment	3	2	2	None
Semester Credit Hours		16	12	8	

Semester – 4

Course Code	Course Title	C H	L H	N L H	Pre-requisites
AH- EPH 201	Exercise Physiology	1	1	0	AH-HAP II 202
AH-SIC 201	Promotion of Safety and Infection Control	3	2	2	None
AH-PAP 201	Patho Physiology	3	3	0	AH-HAP II 202
AH-PTH 201	Pharmacology and Therapeutics	2	2	0	GE-GCH 101, AH-HAP II 202
AS- SMI 202	Surgical Microbiology	3	2	2	None
AS- SPH 301	Surgical Pharmacology	2	1	2	None
AS- SPI 202	General Surgical Procedures and Instrumentation	3	1	4	AH-CMB 201, AH-HAP I 201
Semester Credit Hours		17	12	10	

Semester – 5

Course Code	Course Title	C H	L H	N L H	Pre-requisites
GE-RMB 101	Research Methods and Biostatistics	2	2	0	GE-MHP 101
AH-NDI 201	Nutrition and Diets	1	1	0	AH-CMB 201
AH-HWL 201	Health and Wellness for Life	1	1	0	None
AH-PHS 201	Professionalism in Health Care Settings	1	1	0	None
AS- SWO 301	Surgical Wound	2	1	2	None
AS- HES 401	Hemostasis and Emergency Situations	2	1	2	AH-PTH 201
AS- PCS 202	Preoperative Care of the Surgical Patient	2	1	2	None
AS- ICS 301	Intraoperative Care of the Surgical Patient	2	1	2	AS- SIE 201
AS- PCS 302	Postoperative Care of the Surgical Patient	2	1	2	None
Semester Credit Hours		15	10	10	

Semester – 6

Course Code	Course Title	C H	L H	N L H	Pre-requisites
AH-FEP 201	Foundations of Epidemiology	1	1	0	AH-SIC 201
AH-SHC 201	Social Issues in Health Care	1	1	0	None
AS- AAM 302	Anesthesia – Agents, Methods and Equipment	2	1	2	None
AS- GSP 302	Genitourinary Surgical Procedures and Instrumentation	2	1	2	AS- SPI 202
AS- OSP 301	Obstetric and Gynecologic Surgical Procedures and Instrumentation	2	1	2	AS- SPI 202
AS- ASP 301	Alimentary Canal, Liver and Biliary Tract, Surgical Procedures and Instrumentation	2	1	2	AS- SPI 202
AS- OSP 302	Ophthalmic Surgical Procedures and Instrumentation	2	1	2	AS- SPI 202
AS- OTS 302	Otorhinolaryngologic Surgical Procedures and Instrumentation	2	1	2	AS- SPI 202
AS- PRA I 302	OT Practicum I	2	0	4	None
Semester Credit Hours		16	8	16	

Semester – 7

Course Code	Course Title	C H	L H	N L H	Pre-requisites
AS- PRS 401	Plastic and Reconstructive Surgical Procedures and Instrumentation	2	1	2	AS- SPI 202
AS- OMS 302	Oral and Maxillofacial Surgical Procedures and Instrumentation	2	1	2	AS- SPI 202
AS- ORS 401	Orthopedic Surgical Procedures and Instrumentation	2	1	2	AS- SPI 202
AS- CVS 401	Cardiovascular and Peripheral Vascular Surgical Procedures and Instruments	2	1	2	AS- SPI 202
AS- NSP 401	Neurosurgical Procedures and Instrumentation	2	1	2	AS- SPI 202
AS- PSP 401	Pediatric Surgical Procedures and Instrumentation	2	1	2	AS- SPI 202
AS- TOR 401	Team Work in the Operating Room	1	1	0	AH-CSK 201
AS- PRA II 401	OT Practicum II	3	0	6	None
Semester Credit Hours		16	7	18	

Semester – 8

Course Code	Course Title	C H	L H	N L H	Pre-requisites
AS-INR 410	Internship and Research	16	0	32	Successful completion of All Courses from Semester 1 to 7
Semester Credit Hours		16	0	32	
Total Credit Hours		128			

28.10 Course Description

Semester - 1

GE-ENG 101: English Language and Composition

The course provides an intensive instruction in the writing process focusing on the organization of ideas in well-developed expository and argumentative essays with some emphasis on developing vocabulary and writing the examination answer. In the process the student will be able to document their clinical encounters and their learning effectively.

GE-MHP 101: Mathematics for Allied Health Professionals

This is a basic level course which reviews the concepts of mathematics that has application in health care settings while performing different procedures. The basic of statistics and logarithm is dealt with in this course which will improve the computational skills of health professionals.

GE-CCA 101: Computer Concepts and Application

This course is an introduction to the most common software applications of computers and includes "hands-on" use of microcomputers and some of the major commercial software. These software packages shall include typical features of office suites, such as word processing, spreadsheets, database systems, and other features found in current software packages.

GE-GCH 101: General Chemistry

The course covers topics related to the different chemical reactions, measurements and figures, electronic structures and periodicity; chemical bonding, molecular forms, intermolecular bonding and forces are also discussed in addition to the physical and chemical properties.

AH-CMB 201: Cell and Molecular Biology

The course provides an overview of the organization, function, and regulation of the eukaryotic cell. The cell as a basic unit of life is dealt with extensively at the structural, functional and molecular levels. A concrete learning experience is provided in the laboratory. The course lays foundation to the understanding of the human body systems and the human body as a whole.

AH-CSK 201: Communication Skills for Health Professionals

The course introduces the student to the principles of communication that enhance interpersonal communication between self and other individuals in small and large group settings. Examples from hospital settings will help the learners to visualize themselves in their future roles; lay emphasis to the increasing importance of communication between patient/client and care providers; and the connection between communication practices and quality patient care outcomes.

AH-HCS 201: Health Care Systems

This course deals with making the students aware of the important factors that influence today's health care services. A comparison of national and international health care systems is made to highlight the disparities in health care delivery based on health care economics. Health care for designated populations such as ambulatory clients, long term care clients & mental health clients will be highlighted.

Semester - 2

GE-GPH 101: General Physics

This is an introductory course that includes the study of mechanics, thermo-dynamics, vibrations and wave motions. It is a fundamental course and a basic one for health professional students. Examples of application in clinical laboratory services shall increase the relevance of this foundational course.

GE-USO 101: UAE Society

This course focuses on the unique nature of the UAE society and its political, geographical, cultural, demographical, and social aspects. It highlights the Emirati perspective of contemporary global changes. This course allows the students to explore the Emirati society in global context.

GE-IBS 101: Introduction to Behavioral Sciences

The course is designed to give an overview of the main topics in general psychology and sociology including biological basis of behavior, mental processes: sensation and perception;

learning, motivation, intelligence, human development, personality and behavioral disorders, socialization and social environment contributing to human behavior.

AH-HAP I 201: Human Body Systems I (Anatomy and Physiology)

The first part of the 2-semester course is designed to introduce the student to the major organs and tissues that form the human body systems including body planes, directions and cavities, Integumentary, Skeletal, Muscular and Nervous Systems and Special Senses. This will be done through didactic sessions in the multimedia labs with opportunities for interactive learning activities. The Gross Anatomy laboratory sessions will use models and manikins as well as plastinated body parts to make the learning a truly concrete experience.

AH-HPR 201: Health Professions

The students will be introduced to the different health professions. The course provides opportunities to explore the nature of all the major health professions. The training requirement, job responsibilities, and employment opportunities of each will be compared. The challenges of meeting the growing demands of health care and the shortfall in workforce numbers will be discussed.

AH-LET 201: Law and Ethics for Health Care Professionals

In this course, the student will learn the legal and ethical concepts of healthcare, review the basic principles of ethics and law and discuss how law and ethics are involved in all decisions made in health care settings in the set of case studies provided.

AH-CDH 201: Cultural Diversity in Health Care

The course deals with the diversity of patient/client populations that the healthcare professionals serve due to increasing globalization. In UAE, the expatriate population forms 70-80% of the population made up of people from different countries and 20-30% of Emiratis. The course will highlight the factors that make individuals unique. The course will also highlight how these differences disappear when we learn to respect cultural diversity.

AH-FLS 201: First Aid and Basic Life Support

This course is an essential for all students pursuing a health professional career. The course introduces them to the proper techniques of administering first aid limited to bleeding, shock, poisoning, burns, heat and cold exposure, bone and joint injuries and sudden illness. Methods of cardiopulmonary resuscitation for infants, children, adults and choking victims are also covered in this course.

Semester – 3

GE-ICU 101: Islamic Culture

The course aims to introduce the learner to the concepts and beliefs in Islam that form the basis of Islamic culture. The students are expected to identify the differences, values, and preferences in Islamic culture with the existing ones. The course consists of a general review of Islam as a religion and as an approach to life.

AH-HAP II 202: Human Body Systems II (Anatomy and Physiology)

The second part of the 2-semester course is designed to introduce the student to the major organs and tissues that form the human body systems including, Circulatory, Lymphatic, Respiratory, Digestive, Urinary, Endocrine and Reproductive Systems and common tests and procedures specific to the organ systems. This will be done through didactic sessions in the multimedia labs with opportunities for interactive learning activities. The Gross Anatomy laboratory sessions will use models and manikins as well as plastinated body parts to make the learning a truly concrete experience.

AH-HIM 201: Introduction to Health Information Management

An introductory course with emphasis on the basics of data generated during the delivery of care for patients/clients by individuals directly involved in health management or indirectly involved when pursuing a career in a health related activity. The course will provide an overview of the health information generated in this process to understand the current trends in the management of information from the time it is entered into patient's medical records and until it is subsequently used for the purpose of billing and reimbursement, quality assurance, health surveys for accreditation, research and in developing or changing health policies. During the practicum, the use of information management systems and the protection of the health information will be emphasized.

AH-LSD 201: Lifespan Development

This course is about the development of human beings from conception to death. The systematic changes of human development will be dealt with under three categories: physical, cognitive and psychological development through the perinatal period, infancy, childhood, adolescence and adulthood to old age.

AS-IST 201: Introduction to Surgical Technology

The course will make the student aware of the growing need of a well-trained surgical technologist as part of a surgical team and the role of the surgical technologist in identifying and attending to the usual and special needs of the patients undergoing surgery. The course will highlight the OR as a specialized facility with a sterile area that must be maintained by

physical design, principles of asepsis and sterilization. The service departments that assist in maintaining the OR environment will be discussed.

AS-BDP 201: Biomedicine and Diagnostic Procedures

This course provides a broad base of knowledge for the entry-level surgical technologist in the areas of computers, electricity, physics and robotics. The application of the biomedical sciences in the operation and maintenance of surgical equipment used in diagnostic procedures and in the performance and monitoring of the surgical procedures will be emphasized.

AS-SIE 201: Surgical Instruments, Supplies and General Equipment

During this course, the student shall study the design and purpose of different types of surgical instruments and learn to assemble a set of instruments for a basic laparotomy procedure. In addition they handle accessory and specialty equipment used routinely for surgical procedures. They will also learn how to handle surgical instruments, supplies and equipment using principles of safety and asepsis in the simulation lab.

Semester – 4

AH-EPH 201: Exercise Physiology

This course aims at introducing the learner to understand the basic concepts of exercise physiology, nutrition and human energy expenditure for various activity levels. This course imparts the core knowledge, skills and attitudes needed to assess the systems of energy delivery and its utilization. This course further imparts knowledge regarding different types of nutrition required for various levels of sports performance.

AH-SIC 201: Promotion of Safety and Infection Control

The course has two basic themes: promotion of safety and infection control. The first part will lay emphasis on hazardous physical and chemical agents that affect health of the worker and the patient/client in health care settings. The second part deals with infectious agents and the risk of transmission of infections due to lapses in observation of standard precautions on the part of health professionals. Field visits to the hospital and demonstrations in the skills Laboratory will form a vital part of the learning experience.

AH-PAP 201: Patho Physiology

This course introduces the students to the study of causes and mechanisms of diseases. The responses to injury are dealt first at the cellular level followed by changes at the level of tissues and organs. The topics include cellular pathology, inflammation and tissue repair, hemodynamic, genetic and immune disorders, neoplasia, disorders of nutrition and

environmental pathology. The students then learn to apply the concepts of disease mechanisms in the setting of each organ system. The underlying pathologic basis of systemic diseases will be dealt extensively.

AH-PTH 201: Pharmacology and Therapeutics

This course presents basic pharmacologic principles along with the mechanism of action and side effects of drugs commonly used in health professional practice. The lessons are organized using a systems approach and will deal with the pathophysiology of disease and discuss the drug groups used for treatment. Case studies will be used to discuss how drugs affect medical intervention and how host factors may affect drug effectiveness.

AS-SMI 202: Surgical Microbiology

In this course, the student will learn the principles of asepsis and practice of sterile techniques and the maintenance of the surgical environment before, during and after a surgical procedure.

AS-SPH 301: Surgical Pharmacology

In this course, the student will be able to learn the classification, generic name, trade names, action, indications and dosage of pharmacologic agents used before, during and after in patients undergoing a surgical procedure. In addition, the handling of drugs in the OR and the methods and techniques of anesthetic administration will be emphasized.

AS-SPI 202: General Surgical Procedures and Instrumentation

General surgery involves the abdominal wall, the abdominal cavity and the contents of the abdominal cavity. In this course, the student will be able to identify and locate abdominal organs on cadavers in the gross lab and the manikins in the skills lab. The students will be able to describe the anatomical features of common abdominal surgical incisions used in the surgery of the abdominal wall in hernias and during laparotomy. The student will learn how to arrange the surgical instruments, supplies and equipment appropriate to the surgical procedure and prepare the patient for surgery using a manikin in the skills lab.

Semester – 5

GE-RMB 101: Research Methods and Biostatistics

This course introduces the basic concepts of Research Methods and Biostatistics. The students learn to compute simple qualitative or quantitative data into meaningful information using statistical techniques and to design a research project.

AH-NDI 201: Nutrition and Diets

This introductory course covers all basic aspects of nutrition from nutrients, guidelines, and assessment to how nutrition affects each aspect of the life cycle. The student will be able to relate the topics and issues like a balanced diet and weight management to their own lives.

AH-HWL 201: Health and Wellness for Life

This course helps the students to improve their health habits and introduces life skills that enhance the quality and longevity of life. The course covers many holistic perspectives of personal health, including physical, emotional, mental, social, environmental and spiritual perspectives with a central theme of self-responsibility for one's behavior.

AH-PHS 201: Professionalism in Health Care Settings

This course focuses on the transferable or "soft skills" rather than on the hands-on technical skills that are needed to be performed by all health professionals in a professional, ethical, legal, and competent manner, regardless of one's job function and position in any type of health care organization to present a professional image and to be successful in his/her job. These generic skills include communicating appropriately, working well with teams, respecting and valuing differences in culture, and interacting effectively with co-workers, patients, visitors and guests.

AS-SWO 301: Surgical Wound

During this course, the student will be able to identify and handle sutures, needles and stapling devices used to close wounds by the surgeons and understand how incision choice, tissue-handling techniques, wound closure options, and possible complications which influence wound healing.

AS-HES 401: Hemostasis and Emergency Situations

In this course, the student will learn the methods of hemostasis and techniques of blood replacement. They will learn to identify emergency situations, initiate appropriate action and assist in the treatment of the patient.

AS-PCS 202: Preoperative Care of the Surgical Patient

This course will cover the preoperative patient routines and then addresses the tasks of a surgical technologist in preparing the case for undergoing a surgical procedure.

AS-ICS 301: Intraoperative Care of the Surgical Patient

In this course the student will gain understanding of the flow of a surgical procedure from the time of preparation to the close of surgery. The roles of the scrubbed surgical

technologist, circulator and the surgeon that are required to coordinate the activities of each team member will be emphasized.

AS-PCS 302: Postoperative Care of the Surgical Patient

In this course, the student will be able to gain understanding of the role of the surgical technologist once the surgical procedure is over and the wound is closed. The sequence of events until the patient is removed from the OR and the breakdown of the setup is done in preparation of the next patient will be discussed.

Semester – 6

AH-FEP 201: Foundations of Epidemiology

The course introduces the student to the principles and methods of epidemiology. The student will be able to understand the role of epidemiology while studying the impact of both natural and man-made risk factors on human health.

AH-SHC 201: Social Issues in Health Care

The course introduces the students to the social issues that affect the delivery of health care. The student will be guided to read literature available in this regard to understand the inequalities and inadequacies that occur in delivery of health care as a result of social factors that can be addressed by and those that are beyond the control of the individual health professional.

AS-AAM 302: Anesthesia – Agents, Methods and Equipment

In this course, the students will gain understanding of the agents, techniques and equipment used for anesthesia that will help the surgical technologist to assist the anesthesia provider. The team member's roles during anesthesia administration and roles of the surgical technician as a scrub and circulator from the pre-anesthetic to the post anesthetic phase, in particular, will be emphasized.

AS-GSP 302: Genitourinary Surgical Procedures and Instrumentation

In this course, the student will be able to identify and locate the suprarenal gland, kidneys, ureters, urinary bladder, urethra and organs of the male genital tract on cadavers in the gross laboratory and the manikins in the skills lab. The students will be able to describe the anatomical features of common surgical incisions used in genitourinary surgery. The student will learn how to arrange the surgical instruments, supplies and equipment appropriate to the surgical procedure and prepare the patient for surgery using a manikin in the skills lab.

AS-OSP 301: Obstetric and Gynecologic Surgical Procedures and Instrumentation

In this course, the student will be able to identify and locate organs of the female genital tract on cadavers in the gross laboratory and the manikins in the skills lab. The students will be able to describe the anatomical features of common abdominal and other surgical incisions used in the surgery of the female genital tract. The student will learn how to arrange the surgical instruments, supplies and equipment appropriate to the surgical procedure and prepare the patient for surgery using a manikin in the skills lab.

AS-ASP 301: Alimentary Canal, Liver and Biliary Tract, Surgical Procedures and Instrumentation

In this course, the student will be able to identify and locate organs of the alimentary canal, liver and biliary tract on cadavers in the gross lab and the manikins in the skills lab. The students will be able to describe the anatomical features of common abdominal surgical incisions used in the surgery of the alimentary canal, liver and biliary Tract. The student will learn how to arrange the surgical instruments, supplies and equipment appropriate to the surgical procedure and prepare the patient for surgery using a manikin in the skills lab.

AS-OSP 302: Ophthalmic Surgical Procedures and Instrumentation

In this course, the student will be able to identify and locate organs of the eye and orbital structures on cadavers in the gross lab and the manikins in the skills laboratory. The students will be able to describe the anatomical features of common abdominal surgical incisions used in Ophthalmic Surgery. The student will learn how to arrange the surgical instruments, supplies and equipment appropriate to the surgical procedure and prepare the patient for surgery using a manikin in the skills lab.

AS-OTS 302: Otorhinolaryngologic Surgical Procedures and Instrumentation

In this course, the student will be able to identify and locate organs of the ear, nose, throat and larynx on cadavers in the gross laboratory and the manikins in the skills laboratory. The students will be able to describe the anatomical features of common abdominal surgical incisions used in Otorhinolaryngologic Surgery. The student will learn how to arrange the surgical instruments, supplies and equipment appropriate to the surgical procedure and prepare the patient for surgery using a manikin in the skills lab.

AS-PRA I 302: OT Practicum I

During this course, the student will assist the circulating surgical technologist/OR nurse and the anesthesia provider to manage a surgical case in the peri-operative phase under direction and supervision.

Semester – 7

AS-PRS 401: Plastic and Reconstructive Surgical Procedures and Instrumentation

In this course, the student will be able to identify and locate the skin and its underlying tissues on cadavers in the gross lab and the manikins in the skills lab. The students will be able to describe the anatomical features of common surgical incisions used in the plastic and reconstructive surgery. The student will learn how to arrange the surgical instruments, supplies and equipment appropriate to the surgical procedure and prepare the patient for surgery using a manikin in the skills lab.

AS-OMS 302: Oral and Maxillofacial Surgical Procedures and Instrumentation

In this course, the student will be able to identify and locate structures of the oral cavity, face and cranium on cadavers in the gross lab and the manikins in the skills lab. The students will be able to describe the anatomical features of common abdominal surgical incisions used in the surgery of the oral and maxillofacial surgery. The student will learn how to arrange the surgical instruments, supplies and equipment appropriate to the surgical procedure and prepare the patient for surgery using a manikin in the skills lab.

AS-ORS 401: Orthopedic Surgical Procedures and Instrumentation

In this course, the student will be able to identify and locate the skeletal bones and joints in cadavers in the gross lab and the manikins in the skills lab. The students will be able to describe the anatomical features of common surgical incisions used in orthopedic surgery. The student will learn how to arrange the surgical instruments, supplies and equipment appropriate to the surgical procedure and prepare the patient for surgery using a manikin in the skills laboratory.

AS-CVS 401: Cardiovascular and Peripheral Vascular Surgical Procedures and Instruments

In this course, the student will be able to identify and locate organs of the cardiovascular and respiratory systems on cadavers in the gross laboratory and the manikins in the skills laboratory. The students will be able to describe the anatomical features of common surgical incisions used in cardiovascular and peripheral vascular surgery. The student will learn how to arrange the surgical instruments, supplies and equipment appropriate to the surgical procedure and prepare the patient for surgery using a manikin in the skills laboratory.

AS-NSP 401: Neurosurgical Procedures and Instrumentation

In this course, the student will be able to identify and locate the brain, spinal cord and peripheral nerves that form nervous system on cadavers in the gross laboratory and the manikins in the skills laboratory. The students will be able to describe the anatomical features of common surgical incisions used in the neurosurgery. The student will learn how to arrange

the surgical instruments, supplies and equipment appropriate to the surgical procedure and prepare the patient for surgery using a manikin in the skills laboratory.

AS-PSP 401: Pediatric Surgical Procedures and Instrumentation

In this course, the student will gain understanding of the common surgical procedures performed in children. The important physiological and psychological considerations to address the special needs of pediatric patients in the perioperative environment shall be highlighted.

AS-TOR 401: Team Work in the Operating Room

In this course, the student will gain further understanding of the expanded role of communication skills while working as a member of the group of the perioperative staff made up of many professionals from different departments in the health facility involved with providing healthcare services to the surgical patient and the more focused role of communication skills as a member of the surgical team while attending a patient undergoing a surgical procedure within the OR.

AS-PRA II 401: OT Practicum II

During this course, the student will assist the scrub surgical technologist/scrub nurse and the first assistant/surgeon to manage a surgical case undergoing a surgical procedure under direction and supervision.

Semester – 8

AS-INR 410: Internship and Research

During this course, the student will assist the scrub surgical technologist/scrub nurse and the first assistant/surgeon to manage a surgical case undergoing a surgical procedure under direction and supervision. The student will also perform a research study and submit a project report.

**BACHELOR OF HEALTH SCIENCES –
NURSING SCIENCES [BHS-NS]**

29.0 BACHELOR OF HEALTH SCIENCES-NURSING SCIENCES [BHS-NS]

29.1 Overview

Nursing is a profession within the health care sector focussed on the care of individuals, families and community so that they may attain, maintain or recover optimum health and improve their quality of life. As both an art and a science, nursing is oriented to the provision of care that promotes the well-being of the people it serves.

Nurses are the health care professionals who are trained to care for sick or injured people. They develop plan of care working collaboratively with the physician, the patient, patient's family and other health team members. Nurses provide care both interdependently with other health care professionals and independently as nurse practitioners. They practice in a wide diversity of practice area with a different scope of practice and level of independence in each.

The practice of nursing is rapidly changing and the contemporary nurse practitioners are expected to have a higher level of knowledge and skills needed to meet a new demand for autonomous practice in nursing, and to fulfill the professional desire for evidence-based practice.

The Bachelor of Health Sciences– Nursing Sciences (BHS-NS) program learning outcomes are aligned to Level 7 of the NQF Emirates (National Qualifications Framework).

29.2 Vision

The Bachelor of Health Sciences in Nursing Sciences Program aspires to be a model of excellence, recognized nationally and internationally, for innovative education, dynamic programs of research, and creative approaches to practice. We are committed to develop leaders in nursing whose actions, discoveries and voices strengthen and transform the health care of individuals and community worldwide.

29.3 Mission

To advance the profession of nursing in the UAE and Middle East by graduating nurses who demonstrate highly competent, evidence-based practice and professional behaviors in a dynamic health care environment.

To prepare a highly capable nursing workforce in patient care delivery, multi-faceted leadership, research and scientific discovery to improve the lives of individuals, families and communities.

29.4 Goals and Objectives

Goal:

This program has been developed to enable the graduates of the Bachelor of Health Sciences- Nursing Sciences to integrate a broad generic base of knowledge, skills and behaviours common to all health professions while developing professional skills specific to nursing. This will help the graduate to work effectively both as a team member in multi professional health care delivery teams and in an individual capacity to assume responsibilities as professional competent nurses and midwives in providing preventive, promotive, curative and rehabilitative services. They are also expected to assume the role of teacher, supervisor and manager in a clinical/public health setting/school of nursing and conduct research studies in the areas of nursing practice.

Objectives:

On completion of the four year BHS-Nursing Science program, the graduate will be able to:

1. Apply knowledge from physical, biological, behavioural, medical and nursing sciences in providing nursing care to individuals, families and communities.
2. Provide nursing care based on nursing process concept in collaboration with individuals and groups.
3. Utilize the latest trends and technology in providing health care.
4. Demonstrate critical thinking skills in making decisions in all situations in order to provide quality care.
5. Practice within the framework of code of ethics, professional conduct and acceptable standards of practice within the legal boundaries.
6. Communicate effectively with individual, groups and members of the health team in order to promote effective interpersonal relationship and team work.
7. Demonstrate skills in teaching to individual and groups in clinical/community health settings/school of nursing.
8. Demonstrate leadership and managerial skills in clinical/community health settings.
9. Conduct need based research studies in various settings and utilize the research findings to improve the quality of care.
10. Develop a right attitude and interest to contribute towards advancement of the self and the profession.

29.5 Program Learning Outcomes

This Program provides opportunities for students to develop and demonstrate:

(i) Knowledge

On completion of this program, students will be able to:

- A1:** Demonstrate comprehensive knowledge, critical thinking and clinical judgement in prioritizing patient needs to individualize care and improve nursing outcomes.
- A2:** Identify a research problem, assess it from relevant angles and relate with the sources of current and new research and knowledge with integration of concepts from outside fields.
- A 3:** Integrate theory and evidence from nursing and related sciences for the delivery of safe, effective and evidence based nursing care to diverse population and various systems of health care delivery.

(ii) Skill

On completion of this program students, will be able to:

- B1:** Communicate effectively with clients/patients, co-workers, superiors, other healthcare professionals and members of the public through written, verbal, nonverbal and electronic means employing appropriate interpersonal communication and establishing rapport in interactions with conditional autonomy in nursing.
- B2:** Demonstrate the use of evidence based practice and critical clinical judgment in planning and evaluating the outcome of care in predictable and new contexts.
- B3:** Train health care personnel and educate members of the public, students assigned and co-workers using instructional methods that incorporate relevant educational principles where appropriate in the nursing profession.
- B4:** Provide patient centered care by applying the nursing process and ensuring safety of patient and self in workplace.

(iii) Aspects of Competence

Autonomy and Responsibility:

On completion of this program students, will be able to:

- C1a:** Assume leadership role by employing requisite qualities, leadership skills and management abilities for advancement of nursing profession in all dimensions of nursing practice.
- C1b:** Maintain confidentiality of patient's/client's health information while entering and transmitting data to appropriate agencies.

Role in Context:

On completion of this program, students will be able to:

- C2a:** Participate as a member of a health care team in promotive, preventive and restorative health care system; serving as a resource person as well as liaison between the community and the health care facility by assessing, understanding and applying the nursing process.
- C2b:** Use critical analysis, research systems, evaluative problem solving techniques and appropriate management skills to resolve problems arising in the workplace.
- C2c:** Arrive at decisions and take actions based on sound judgment, moral reasoning and professional values when faced with ethical and legal issues in the workplace.

Self-Development:

On completion of this program, students will be able to:

- C3a:** Develop personal qualities required for contributing to the advancement of one's profession, adapting constantly to advances in technology and practicing ethical values in personal and professional life.
- C3b:** Demonstrate commitment to life-long learning, improving competencies and self-evaluation and so that the members of the community would receive an optimum level of service based on current knowledge in the profession of nursing.

29.6 Matrix of Program Learning Outcomes (PLO) aligned with QF Emirates

National Standards of Learning Outcomes for Bachelor Program (UAENQF LEVEL 7)	Learning Outcomes of Bachelor of Health Sciences - Nursing Sciences													
	A1	A2	A3	B1	B2	B3	B4	C1a	C1b	C2a	C2b	C2c	C3a	C3b
I. Knowledge														
Specialized factual and theoretical knowledge and an understanding of the boundaries in a field of work or discipline, encompassing a broad and coherent body of knowledge and concepts, with substantive depth in the underlying principles and theoretical concepts	√													
An understanding of allied knowledge and theories in related fields of work or disciplines and in the case of professional disciplines including related regulations, standards, codes, conventions			√											
Understanding of critical approach to the creation and compilation of a systematic and coherent body of knowledge and concepts gained from a range of sources	√													
A comprehensive understanding of critical analysis, research systems and methods and evaluative problem-solving techniques	√	√												
Familiarity with sources of current and new research and knowledge with integration of concepts from outside fields		√												

II. Skill														
Technical, creative and analytical skills appropriate to solving specialized problems using evidentiary and procedural based processes in predictable and new contexts that include devising and sustaining arguments associated with a field of work or discipline					√		√							
Evaluating, selecting and applying appropriate methods, procedures or techniques in processes of investigation towards identified solutions evaluating and implementing appropriate research tools and strategies associated with the field of work or discipline					√		√							
Highly developed advanced communication and information technology skills to present, explain and/or critique complex and unpredictable matters				√		√								
III. Aspects of Competence														
III.a. Autonomy and Responsibility														
Can take responsibility for developing innovative and advanced approaches to evaluating and managing complex and unpredictable work procedures and processes, resources or learning								√						
Can manage technical, supervisory or design processes in unpredictable, unfamiliar and varying contexts								√						
Can work creatively and/or effectively as an individual, in team leadership, managing contexts, across technical or professional activities								√	√					

Can express an internalised, personal view, and accept responsibility to society at large and to socio-cultural norms and relationships										√				
III b. Role in Context														
Can function with full autonomy in technical and supervisory contexts and adopt para-professional roles with little guidance											√			
Can take responsibility for the setting and achievement of group or individual outcomes and for the management and supervision of the work of others or self in the case of a specialisation in field of work or discipline											√			
Can participate in peer relationships with qualified practitioners and lead multiple, complex groups										√				
Can take responsibility for managing the professional development and direct mentoring of individuals and groups										√				
III c. Self-development														
Can self-evaluate and take responsibility for contributing to professional practice, and undertake regular professional development and/ or further learning can manage learning													√	
Can manage learning tasks independently and professionally, in complex and sometimes unfamiliar learning contexts														√
Can contribute to and observe ethical standard													√	

29.7 Program Learning Outcomes aligned with each course

Code	Course Title	Program Learning Outcomes													
		Knowledge			Skill				Aspects of Competence						
		A1	A2	A3	B1	B2	B3	B4	C1a	C1b	C2a	C2b	C2c	C3a	C3b
GE-ENG 101	English Language and Composition	F	P	F	F	F	F			F	F	F		F	F
GE-MHP 101	Mathematics for Allied Health Professionals	P	F	P		P	P			P		P		P	F
GE-CCA 101	Computer Concepts and Application	P	F	P	F	F	F	P		F	P	P		F	F
GE-GPH 101	General Physics	P	F	P		P		P						F	F
AH-CMB 201	Cell and Molecular Biology	P	F	P		P		P			P			P	F
AH-CSK 201	Communication Skills for Health Professionals	P			F		F		F	F	F		P	P	P
AH-HCS 201	Health Care Systems			P	F	P	F		P	P	F		P	P	P
GE-GCH 101	General Chemistry	P	F	P		P		P						F	F
GE-USO 101	UAE Society	P		P	F		P			P	P		P	P	
GE-IBS 101	Introduction to Behavioral Sciences	P			F		F		F	F	F		P	P	P
AH-HAP I 201	Human Body Systems - I	P	F	P		P		P						F	F
AH-HPR 201	Health Professions			P	F	P	F		P	P	F		P	P	P
AH-LET 201	Law and Ethics for Health Professionals	P			F		P	F	P	F	F	P	F	F	P
AH-CDH 201	Cultural Diversity in Health Care	P			F		F	P	P	P	F	P	F	F	P

AH-FLS 201	First Aid and Basic Life Support	P	F	P		P		P					F	F	F
GE-ICU 101	Islamic Culture	P		P	F		P			P	P		P	P	
AH- HAP II 202	Human Body Systems - II	P	F	P		P		P						F	F
AH- HIM 201	Introduction to Health Information Management	P	F	P	F	F	F	P		F	P	P		F	F
AH- LSD 201	Lifespan Development	P	F	P		P		P						P	F
NS- FNP 201	Fundamentals of Nursing Practice	F	F	F	F	F	F	P	P	F	F	P	F	F	F
NS- PPN 201	Principles and Practice in Nursing	F	F	P	F	F	F	F	P	F	F	P	F	F	F
NS-CIN 201	Concepts in Nursing	F	F	F	F	F	F	P	P	F	F	P	F	F	F
NS- PRA I 201	Practicum I	F	F	P	F	F	F	F	P	F	F	P	F	F	F
AH- EPH 201	Exercise Physiology		F					P							P
AH-SIC 201	Promotion of Safety and Infection Control	P	P				P	F			F		P	P	P
AH- PAP 201	Patho Physiology	P	F	P		P		P			P			F	F
AH- PTH 201	Pharmacology and Therapeutics	P	F	P		P	P	F			P		P	F	F
NS- MSN I 201	Medical and Surgical Nursing- I	F	F	P	F	F	F	F	P	F	F	P	F	F	F
NS- MHN I 201	Mental Health Nursing- I	F	F	P	F	F	F	P	P	F	F	P	F	F	F
NS- CMN I 201	Community Health Nursing -I	F	F	P	F	F	F	F	P	F	F	P	F	F	F

NS-PRA II 201	Practicum - II	F	F	P	F	F	F	F	P	F	F	P	F	F	F
GE-RMB 101	Research Methods and Biostatistics	F	F	F		F	P			F	F	F	F	F	F
AH-NDI 201	Nutrition and Diets	P	F	P		P	P	F			P		P	F	F
AH-HWL 201	Health and Wellness for Life	P	F	P		P	P	F			P		P	F	F
AH-PHS 201	Professionalism in Health Care Settings			P	F	P	F		P	P	F		P	F	P
NS-MSN II 301	Medical and Surgical Nursing- II	F	F	P	F	F	F	F	P	F	F	P	F	F	F
NS-CHN I 301	Child Health Nursing- I	F	F	P	F	F	F	F	P	F	F	P	F	F	F
NS-MHN II 301	Mental Health Nursing- II	F	F	P	F	F	F	F	P	F	F	P	F	F	F
NS-PRA III 301	Practicum - III	F	F	P	F	F	F	F	P	F	F	P	F	F	F
AH-FEP 201	Foundations of Epidemiology	F	F	F		F	P			F	F	F	F	F	F
AH-SHC 201	Social Issues in Health Care	P			F		F	P	P	P	F	P	F	F	P
NS-MSN III 301	Medical and Surgical Nursing- III	F	F	F	F	F	F	F	F	F	F	F	F	F	F
NS-CHN II 301	Child Health Nursing- II	F	F	P	F	F	F	F	P	F	F	P	F	F	F
NS-CMN II 301	Community Health Nursing – II	F	F	F	F	F	F	F	F	F	F	F	F	F	F
NS-OBNI 301	Obstetrics and Gynecology Nursing- I	F	F	P	F	F	F	P	P	F	F	P	F	F	F
NS-PRA IV 301	Practicum - IV	F	F	F	F	F	F	F	F	F	F	F	F	F	F
NS-CHN III 401	Child Health Nursing- III	F	F	F	F	F	F	F	F	F	F	F	F	F	F

NS-OBG II 401	Obstetrics and Gynecology Nursing- II	F	F	F	F	F	F	F	F	F	F	F	F	F	F
NS-NAD 401	Nursing Administration	F	F	F	F	F	F	F	F	F	F	F	F	F	F
NS-NED 401	Nursing Education	F	F	F	F	F	F	F	F	F	F	F	F	F	F
NS-PRA V 401	Practicum – V	F	F	F	F	F	F	F	F	F	F	F	F	F	F
NS-INR 410	Internship and Research	F	F	F	F	F	F	F	F	F	F	F	F	F	F

29.8 Program Structure

The Bachelor of Health Sciences – Nursing Sciences [BHS- NS] is a 4 year / 8 Semester / 128 Credit Hours program offered by College of Allied Health Sciences. This program is based on the universal concept that patient care involves a team approach in which personnel belonging to different professions are gaining importance.

The curriculum includes a combination of courses in General Education, Allied Health Sciences, Biomedical Sciences and Professional courses in Nursing Sciences that focus on imparting knowledge and developing skills to conduct various nursing procedures.

Students who fulfill the graduation requirements and have successfully demonstrated the achievements of all competencies will be awarded the degree of Bachelor of Health Sciences (Nursing Sciences).

The program consists of 128 Credit Hours

Courses	Credit Hours
General Education Courses	21
Allied Health Sciences Courses	36
Professional Courses - Nursing Sciences	71
TOTAL	128

29.9 Plan of Study

Semester – 1

Course Code	Course Title	C H	L H	N L H	Pre-requisites
GE-ENG 101	English Language and Composition	3	3	0	None
GE-MHP 101	Mathematics for Allied Health Professionals	2	2	0	None
GE-CCA 101	Computer Concepts and Application	3	3	0	None
GE-GCH 101	General Chemistry	3	3	0	None
AH-CMB 201	Cell and Molecular Biology	3	3	0	None
AH-CSK 201	Communication Skills for Health Professionals	1	1	0	None
AH-HCS 201	Health Care Systems	1	1	0	None
Semester Credit Hours		16	16	0	

Semester – 2

Course Code	Course Title	C H	L H	N L H	Pre-requisites
GE-GPH 101	General Physics	3	3	0	None
GE-USO 101	UAE Society	1	1	0	None
GE-IBS 101	Introduction to Behavioral Sciences	2	2	0	None
AH-HAP I 201	Human Body Systems – I (Anatomy and Physiology)	4	2	4	AH-CMB 201
AH-HPR 201	Health Professions	1	1	0	None
AH-LET 201	Law and Ethics for Health Care Professionals	2	2	0	None
AH-CDH 201	Cultural Diversity in Health Care	1	1	0	None
AH-FLS 201	First Aid and Basic Life Support	2	2	0	None
Semester Credit Hours		16	14	4	

Semester – 3

Course Code	Course Title	C H	L H	N L H	Pre-requisites
GE-ICU 101	Islamic Culture	2	2	0	None
AH-HAP II 202	Human Body Systems – II (Anatomy and Physiology)	4	2	4	AH-HAP I 201
AH-HIM 201	Introduction to Health Information Management	1	1	0	None
AH-LSD 201	Lifespan Development	2	2	0	AH-HAP I 201

NS-FNP 201	Fundamentals of Nursing Practice	2	2	0	AH-FLS 201
NS-PPN 201	Principles and Practice in Nursing	2	1	2	AH-FLS 201
NS-CIN 201	Concepts in Nursing	1	1	0	None
NS- PRA I 201	Practicum - I	2	0	4	None
Semester Credit Hours		16	11	10	

Semester – 4

Course Code	Course Title	C H	L H	N L H	Pre-requisites
AH- EPH 201	Exercise Physiology	1	1	0	AH-HAP II 202
AH-SIC 201	Promotion of Safety and Infection Control	3	2	2	None
AH-PAP 201	Patho Physiology	3	3	0	AH-HAP II 202
AH-PTH 201	Pharmacology and Therapeutics	2	2	0	GE-GCH 101, AH-HAP II 202
NS-MSN I 201	Medical and Surgical Nursing-I	2	1	2	AH-HAP II 202
NS-MHN I 201	Mental Health Nursing- I	2	2	0	GE-IBS 101
NS-CMN I 201	Community Health Nursing -I	2	1	2	AH-CDH 201
NS-PRA II 201	Practicum - II	2	0	4	NS-PRA I 201
Semester Credit Hours		17	12	10	

Semester – 5

Course Code	Course Title	C H	L H	N L H	Pre-requisites
GE-RMB 101	Research Methods and Biostatistics	2	2	0	GE-MHP 101
AH-NDI 201	Nutrition and Diets	1	1	0	AH-CMB 201
AH-HWL 201	Health and Wellness for Life	1	1	0	None
AH-PHS 201	Professionalism in Health Care Settings	1	1	0	None
NS-MSN II 301	Medical and Surgical Nursing-II	4	2	4	NS-MSN I 201
NS-CHN I 301	Child Health Nursing- I	2	1	2	None
NS-MHN II 301	Mental Health Nursing- II	2	1	2	NS-MHN I 201
NS-PRA III 301	Practicum - III	2	0	4	NS-PRA II 201
Semester Credit Hours		15	9	12	

Semester – 6

Course Code	Course Title	C H	L H	N L H	Pre-requisites
AH-FEP 201	Foundations of Epidemiology	1	1	0	AH-SIC 201
AH-SHC 201	Social Issues in Health Care	1	1	0	None
NS-MSN III 301	Medical and Surgical Nursing-III	2	1	2	NS-MSN II 301
NS-CHN II 301	Child Health Nursing- II	3	2	2	NS-CHN I 301
NS-CMN II 301	Community Health Nursing -II	2	1	2	NS-CMN I 201
NS-OBN I 301	Obstetrics and Gynecology Nursing- I	3	1	4	None
NS-PRA IV 301	Practicum - IV	4	0	8	NS-PRA III 301
Semester Credit Hours		16	7	18	

Semester – 7

Course Code	Course Title	C H	L H	N L H	Pre-requisites
NS-CHN III 401	Child Health Nursing- III	3	2	2	NS-CHN II 301
NS-OBG II 401	Obstetrics and Gynecology Nursing- II	2	1	2	NS-OBN I 301
NS-NAD 401	Nursing Administration	2	1	2	None
NS-NED 401	Nursing Education	3	2	2	None
NS-PRA V 401	Practicum - V	6	0	12	NS-PRA IV 301
Semester Credit Hours		16	6	20	

Semester – 8

Course Code	Course Title	C H	L H	N L H	Pre-requisites
NS-INR 410	Internship and Research	16	0	32	Successful completion of All Courses from Semester 1 to 7
Semester Credit Hours		16	0	32	
Total Credit Hours		128			

29.10 Course Description

Semester – 1

GE-ENG 101: English Language and Composition

The course provides an intensive instruction in the writing process focusing on the organization of ideas in well-developed expository and argumentative essays with some emphasis on developing vocabulary and writing the examination answer. In the process the student will be able to document their clinical encounters and their learning effectively.

GE-MHP 101: Mathematics for Allied Health Professionals

This is a basic level course which reviews the concepts of mathematics that has application in health care settings while performing different procedures. The basic of statistics and logarithm is dealt with in this course which will improve the computational skills of health professionals.

GE-CCA 101: Computer Concepts and Applications

This course is an introduction to the most common software applications of computers and includes "hands-on" use of computers and some of the major commercial software. These software packages shall include typical features of office suites, such as word processing, spreadsheets, database systems, and other features found in current software packages.

GE-GCH 101: General Chemistry

The course covers topics related to the different chemical reactions, measurements and figures, electronic structures and periodicity; chemical bonding, molecular forms, intermolecular bonding and forces are also discussed in addition to the physical and chemical properties.

AH-CMB 201: Cell and Molecular Biology

The course provides an overview of the organization, function, and regulation of the eukaryotic cell. The cell as a basic unit of life is dealt with extensively at the structural, functional and molecular levels. A concrete learning experience is provided in the laboratory. The course lays foundation to the understanding of the human body systems and the human body as a whole.

AH-CSK 201: Communication Skills for Health Professionals

The course introduces the student to the principles of communication that enhance interpersonal communication between self and other individuals in small and large group settings. Examples from hospital settings will help the learners to visualize themselves in their future roles; lay emphasis to the increasing importance of communication between

patient/client and care providers; and the connection between communication practices and quality patient care outcomes.

AH-HCS 201: Health Care Systems

This course deals with making the students aware of the important factors that influence today's health care services. A comparison of national and international health care systems is made to highlight the disparities in health care delivery based on health care economics. Health care for designated populations such as ambulatory clients, long term care clients & mental health clients will be highlighted.

Semester – 2

GE-GPH 101: General Physics

This is an introductory course that includes the study of mechanics, thermo-dynamics, vibrations and wave motions. It is a fundamental course and a basic one for health professional students. Examples of application in clinical laboratory services shall increase the relevance of this foundational course.

GE-USO 101: UAE Society

This course focuses on the unique nature of the UAE society and its political, geographical, cultural, demographical, and social aspects. It highlights the Emirati perspective of contemporary global changes. This course allows the students to explore the Emirati society in global context.

GE-IBS 101: Introduction to Behavioral Sciences

The course is designed to give an overview of the main topics in general psychology and sociology including biological basis of behavior, mental processes: sensation and perception: learning, motivation, intelligence, human development, personality and behavioral disorders, socialization and social environment contributing to human behavior.

AH-HAP I 201: Human Body Systems I (Anatomy and Physiology)

The first part of the 2-semester course is designed to introduce the student to the major organs and tissues that form the human body systems including body planes, directions and cavities, Integumentary, Skeletal, Muscular and Nervous Systems and Special Senses. This will be done through didactic sessions in the multimedia labs with opportunities for interactive learning activities. The Gross Anatomy Laboratory sessions will use models and manikins as well as plastinated body parts to make the learning a truly concrete experience.

AH-HPR 201: Health Professions

The students will be introduced to the different health professions. The course provides opportunities to explore the nature of all the major health professions. The training requirement, job responsibilities, and employment opportunities of each will be compared. The challenges of meeting the growing demands of health care and the shortfall in workforce numbers will be discussed.

AH-LET 201: Law and Ethics for Health Care Professionals

In this course, the student will learn the legal and ethical concepts of healthcare, review the basic principles of ethics and law and discuss how law and ethics are involved in all decisions made in health care settings in the set of case studies provided.

AH-CDH 201: Cultural Diversity in Health Care

The course deals with the diversity of patient/client populations that the healthcare professionals serve due to increasing globalization. In UAE the expatriate population forms 70-80% of the population made up of people from different countries and 20-30% of Emiratis. The course will highlight the factors that make individuals unique. The course will also highlight how these differences disappear when we learn to respect cultural diversity.

AH-FLS 201: First Aid and Basic Life Support

This course is an essential for all students pursuing a health professional career. The course introduces them to the proper techniques of administering first aid limited to bleeding, shock, poisoning, burns, heat and cold exposure, bone and joint injuries and sudden illness. Methods of cardiopulmonary resuscitation for infants, children, adults and choking victims are also covered in this course.

Semester – 3

GE-ICU 101: Islamic Culture

The course aims to introduce the learner to the concepts and beliefs in Islam that form the basis of Islamic culture. The students are expected to identify the differences, values, and preferences in Islamic culture with the existing ones. The course consists of a general review of Islam as a religion and as an approach to life.

AH-HAP II 202: Human Body Systems II (Anatomy and Physiology)

The second part of the 2-semester course is designed to introduce the student to the major organs and tissues that form the human body systems including, Circulatory, Lymphatic, Respiratory, Digestive, Urinary, Endocrine and Reproductive Systems and common tests and procedures specific to the organ systems. This will be done through didactic sessions in the

multimedia labs with opportunities for interactive learning activities. The Gross Anatomy Laboratory sessions will use models and manikins as well as plastinated body parts to make the learning a truly concrete experience.

AH-HIM 201: Introduction to Health Information Management

An introductory course with emphasis on the basics of data generated during the delivery of care for patients/clients by individuals directly involved in health management or indirectly involved when pursuing a career in a health related activity. The course will provide an overview of the health information generated in this process to understand the current trends in the management of information from the time it is entered into patient medical records and until it is subsequently used for the purpose of billing and reimbursement, quality assurance, health surveys for accreditation, research and in developing or changing health policies. During the practicum, the use of information management systems and the protection of the health information will be emphasized.

AH-LSD 201: Lifespan Development

This course is about the development of human beings from conception to death. The systematic changes of human development will be dealt with under three categories: physical, cognitive and psychological development through the perinatal period, infancy, childhood, adolescence and adulthood to old age.

NS-FNP 201: Fundamentals of Nursing Practice

This course aims at developing an understanding of the philosophy, objectives and responsibilities in nursing as a profession to the learners. The course imparts knowledge and skills in the current concepts involved in the practice and developments in the nursing profession.

NS-PPN 201: Principles and Practice in Nursing

This course is designed to provide knowledge and develop skills in the nursing techniques to practice them on patients. The course promotes skills in the use of nursing process to provide nursing care.

NS-CIN 201: Concepts in Nursing

This course provides knowledge on the basic concepts that form the foundations of nursing practice. The course provides information on nursing history, health, wellness – illness and the nursing care.

NS-PRA I 201: Practicum I

This course is the first of a series of five clinical practicum courses, which provides clinical experiences wherein the student is trained to develop basic skills in: communication, meeting basic physical, mental and spiritual needs of individual patients, reporting and recording of signs and symptoms, history taking, nursing process and recognizing patient as an individual with basic human needs, a member of the family and community, carrying out simple nursing procedures and assisting in treatments under direct supervision of a clinical faculty.

Semester - 4

AH-EPH 201: Exercise Physiology

This course aims at introducing the learner to understand the basic concepts of exercise physiology, nutrition and human energy expenditure for various activity levels. This course imparts the core knowledge, skills and attitudes needed to assess the systems of energy delivery and its utilization. This course further imparts knowledge regarding different types of nutrition required for various levels of sports performance.

AH-SIC 201: Promotion of Safety and Infection Control

The course has two basic themes: promotion of safety and infection control. The first part will lay emphasis on hazardous physical and chemical agents that affect health of the worker and the patient/client in health care settings. The second part deals with infectious agents and the risk of transmission of infections due to lapses in observation of standard precautions on the part of health professionals. Field visits to the hospital and demonstrations in the skills laboratory will form a vital part of the learning experience.

AH-PAP 201: Patho Physiology

This course introduces the students to the study of causes and mechanisms of diseases. The responses to injury are dealt first at the cellular level followed by changes at the level of tissues and organs. The topics include cellular pathology, inflammation and tissue repair, hemodynamic, genetic and immune disorders, neoplasia, disorders of nutrition and environmental pathology. The students then learn to apply the concepts of disease mechanisms in the setting of each organ system. The underlying pathologic basis of systemic diseases will be dealt extensively.

AH-PTH 201: Pharmacology and Therapeutics

This course presents basic pharmacologic principles along with the mechanism of action and side effects of drugs commonly used in health professional practice. The lessons are organized using a systems approach and will deal with the pathophysiology of disease and discuss the drug groups used for treatment. Case studies will be used to discuss how drugs affect medical intervention and how host factors may affect drug effectiveness.

NS-MSN I 201: Medical and Surgical Nursing I

The course introduces and develops the student's knowledge and skills in patient care with medical and surgical problems. It includes review of relevant anatomy and physiology, pathophysiology and management in specific problems and the nursing management as an introduction to medical and surgical nursing.

NS-MHN I 201: Mental Health Nursing I

This course develops the learners to recognize and appreciate the causes, symptoms and process of abnormal human behavior. It helps the learners in understanding the treatment modalities that are used in the present days with a comparison to the past, cultural and religious practices. The course describes the principles and practice in psychiatric nursing. There will be a development of beginning skills in mental health nursing care both in all the set up and facilities.

NS-CMN I 201: Community Health Nursing I

The course is designed to develop in depth understanding and expertise in the field of community health nursing. The student will gain knowledge regarding the principles of promotion and maintenance of physical, mental and environmental health of individuals, families & groups as well as develop skills required to manage various emergency situations and population explosion.

NS-PRA II 201: Practicum II

This course is the second of a series of five clinical practicum courses, which provides clinical experiences in medical-surgical nursing procedures and community health nursing procedures under direct supervision of a clinical faculty member.

Semester – 5

GE-RMB 101: Research Methods and Biostatistics

This course introduces the basic concepts of Research Methods and Biostatistics. The students learn to compute simple qualitative or quantitative data into meaningful information using statistical techniques and to design a research project.

AH-NDI 201: Nutrition and Diets

This introductory course covers all basic aspects of nutrition from nutrients, guidelines, and assessment to how nutrition affects each aspect of the life cycle. The student will be able to relate the topics and issues like a balanced diet and weight management to their own lives.

AH-HWL 201: Health and Wellness for Life

This course helps the students to improve their health habits and introduces life skills that enhance the quality and longevity of life. The course covers many holistic perspectives of

personal health, including physical, emotional, mental, social, environmental and spiritual perspectives with a central theme of self-responsibility for one's behaviour.

AH-PHS 201: Professionalism in Health Care Settings

This course focuses on the transferable or "soft skills" rather than on the hands-on technical skills that are needed to be performed by all health professionals in a professional, ethical, legal, and competent manner, regardless of one's job function and position in any type of health care organization to present a professional image and to be successful in his/her job. These generic skills include communicating appropriately, working well with teams, respecting and valuing differences in culture, and interacting effectively with co-workers, patients, visitors and guests.

NS-MSN II 301: Medical and Surgical Nursing II

The course builds on the knowledge and aims at enhancing the skills in caring patients with medico-surgical complications. Relevant anatomy, physiology, pathology and general management principles are discussed in detail here.

NS-CHN I 301: Child Health Nursing I

This course is aimed at developing and understanding different approaches to child care, growth and development and common behavioral, social, mental problems of children. Also this course deals with the perioperative care in children and health education of children and their family.

NS-MHN II 301: Mental Health Nursing II

This course builds on the knowledge gained earlier and understanding of the modern approach to mental health. It prepares the learners in the identification, prevention, treatment and nursing management of common mental health problems. This course also helps to develop an understanding of the various therapeutic modalities for the individual, family and community.

NS-PRA III 301: Practicum III

This course is the third of a series of five clinical practicum courses, which provides clinical experiences in medical surgical nursing procedures, child health nursing procedures and mental health nursing under direct supervision of a clinical faculty.

Semester - 6

AH-FEP 201: Foundations of Epidemiology

The course introduces the student to the principles and methods of epidemiology. The student will be able to understand the role of epidemiology while studying the impact of both natural and man-made risk factors on human health.

AH-SHC 201: Social Issues in Health Care

The course introduces the students to the social issues that affect the delivery of health care. The student will be guided to read literature available in this regard to understand the inequalities and inadequacies that occur in delivery of health care as a result of social factors that can be addressed by and those that are beyond the control of the individual health professional.

NS-MSN III 301: Medical and Surgical Nursing III

This course imparts knowledge and skills in providing advanced nursing care in different settings and facilities to the patients with medical and surgical problems. It gives the necessary knowledge to function independently in providing nursing care. The students gain skills to identify the patient's needs comprehensively and manage it accordingly.

NS-CHN II 301: Child Health Nursing II

This course aims at developing and understanding the approach to child-care, identification, prevention and nursing management of common problems of neonates and children systematically.

NS-CMN II 301: Community Health Nursing II

This course imparts knowledge and skills to practice community health nursing with individuals, family and groups. The course gives knowledge and skills to provide nursing care at both urban and rural settings by using the principles and concepts of community health nursing.

NS-OBG I 301: Obstetrics and Gynecology Nursing I

This course gives an introduction to obstetrics and gynecology nursing. It orients the learners to the concepts in obstetrics and gynecology nursing. The course reviews the relevant anatomy and physiology and imparts knowledge and skills in assessment and management of normal obstetrics and gynecology cases.

NS-PRA IV 301: Practicum IV

This course is the fourth in the series of five practicum courses, which provides clinical experiences in medical and surgical nursing procedures, child health nursing procedures, community health nursing and obstetrics and gynecology nursing procedures under direct supervision of a clinical faculty member.

Semester - 7

NS-CHN III 401: Child Health Nursing III

This course is aimed at developing an understanding of approach to child-care, identification, prevention and nursing management of common problems in reproductive system,

oncology, burns, crisis, pediatric emergencies, challenged children and various diagnostic procedures in pediatric population.

NS-OBG II 401: Obstetrics and Gynecology Nursing II

This course imparts knowledge and skills in the nursing management during complicated pregnancy and delivery. It develops the student's knowledge to differentiate normal and abnormal conditions in obstetrics and gynecology. Student will gain skills and knowledge in maternal and fetal monitoring during pregnancy and labor.

NS-NAD 401: Nursing Administration

This course is designed to enable students to acquire understanding of management of clinical and community health nursing services and nursing educational programmes. This course also aims at the understanding of the professional responsibilities, prospects and contribution to the growth of the profession.

NS-NED 401: Nursing Education

The course introduces the learner with the basic knowledge of education, nursing education, its philosophy, objectives and the teaching- learning process which includes the methods of teaching and the use of audio-visual aids. It also gives the learner knowledge on the evaluation process and the tools that aid in assessment.

NS-PRA V 401: Practicum V

This course is the fifth in the series of five clinical practicum courses, which provides clinical experiences in child health nursing, Obstetrics and gynecology nursing, nursing administration and nursing education under direct supervision of a clinical faculty member.

Semester-8

NS-INR 410: Internship and Research

This course is to provide practical clinical experience in nursing care. Students are required to work with maximum independence and less supervision. They have to obtain expertise in the subjects that are learned during the course period both theory and practical. The gap between the theory and practical has to be established and clear awareness on this is maintained. Independent quality nursing care by following the standards and principles in all aspects is expected. The student will also conduct a research study and submit a project report.

**CENTER FOR CONTINUING
EDUCATION & COMMUNITY
OUTREACH (CCE & CO)**

30. CENTER FOR CONTINUING EDUCATION & COMMUNITY OUTREACH (CCE & CO)

30.1 Overview

Gulf Medical University is committed to excellence in research, teaching, patient care, and the advancement of the art and science of Medicine. To this end, the mission of its continuing medical education programs is to improve patient care by providing lifelong educational opportunities for physicians and allied health professionals and health care workers based upon identified needs that will in turn improve the health care of patients both now and for future generations.

Another goal is to improve the career satisfaction of physicians and allied health professionals by providing them with educational opportunities which keep them current with the latest developments in Medicine and Allied Health Sciences, while simultaneously offering current faculty and CME participants the opportunity to interact with physicians and other allied health professionals at other institutions through CME activities.

The medical university is committed to the maintenance and continued development of a community of scientific and clinical scholarship. The scope of the CME program shall appropriately cater to the needs of health professionals in all areas of medicine based on an assessment of their educational needs. The CME offerings for the local community of health professionals shall be concentrated in areas where the Colleges of GMU and its affiliates have recognized excellence, while its in-house activities shall attempt to complement its academic and clinical strengths.

The potential participants for the CME activities are:

- Physicians and other health professionals on the staff of all the colleges and its affiliated hospitals
- Alumni of the Colleges of Medicine, Pharmacy, Dentistry, Allied Health Sciences and Graduate Studies and the current students.
- Physicians located in the communities surrounding the Gulf Medical College Hospital and its affiliates (SKHA, UAQH, & MH).
- Physicians and allied health professionals and health care workers practicing and working in Ajman and the neighboring Emirates.

To address these educational needs participants, the Center for Continuing Education & Community Outreach (CCE&CO) shall offer medical and allied health education programs that shall be primarily face to face courses workshop and conferences. However, in response to changing physician needs and making optimum use of new technologies, it shall produce

learning packages including internet-based activities, although they are not currently a major focus of its educational efforts. Collaborating with extramural organizations of recognized merit to offer jointly sponsored programs will also be considered part of its mission.

The overall CME program efforts shall result in activities that succeed in the transmission and application of knowledge of medicine and allied health sciences. Understanding the impact of the CME activities on patient care is central to the mission of these programs. The CCE&CO shall assess the outcome of its programs, with studies undertaken to assess changes in participant's knowledge, attitudes and behaviour as a result of participation in its CME activities, and to endeavour to understand the impact these have on patient care.

Through the CCE&CO the university shall reach out to the employed and unemployed health workforce in the community in an attempt to extend the educational resources of GMU and additional courses and activities to the non-traditional learners to complete their degree or advance their education.

The CCE&CO shall extend the University's educational resources and services through its outreach programs and provide non-credit and credit-based instructional programs for individuals, organizations, and businesses in the health sector. The CCE&CO shall provide coordination, logistical support and administrative oversight of all distance and college-based continuing education programs to help the University fulfil its educational mission. During this year, the center will be re-organized as the Office for Continuing Education and Community Outreach, to serve better the University's mission and vision as a comprehensive university for generating a skilled health work force for the country.

The center shall offer lifelong learning courses, services, and programs designed to meet the personal improvement, career, and cultural needs of individuals. Courses shall be non-credit and include special interest, certificate programs, computer skills; professional development and test preparation. Various non-credit educational programs (workshops, seminars, short courses, etc.) shall be scheduled throughout the year by the colleges of the University and the CCE&CO making it possible for the University to serve greater numbers of people of all ages with richer and more diversified programs. The programs vary in length from one day to less than 12 months, and the subject matter shall be selected as needed for the group being served.

CE units shall be awarded to participants who successfully complete programs that are sponsored by the CCE&CO and approved by an academic unit. Transcripts indicating awarded CE units shall be made available.

The CCE&CO shall develop programs for the health professionals and industry, government, professional, civic, and service groups. A variety of instructional methods shall be used to assure maximum participation. Distinguished faculty members from GMU and other institutions of higher education, and national and international resource persons shall serve as consultants, instructors, and lecturers for the programs.

Professional program coordinators shall be available to provide technical assistance in program planning, budget preparation, and evaluation, and to assist organizations in developing programs consistent with the needs of the group and the overall educational objectives of the university.

The Health Communication Division (HCD) shall assist in the delivery of short-term programs (conferences, workshops, symposia, and seminars) consistent with the needs of specific groups and organizations to broaden their professional competencies. This division currently serves the academic and administrative units of the University as well as liaises between organizations such as government agencies, schools, professional organizations, and other interest groups.

The HCD shall accommodate activities that require only management support during the conference itself, as well as those that require a full complement of services. Professional program coordinators shall provide assistance with conducting needs assessments, technical program design, program budget development, instructional resources, brochure preparation, logistics, registration, and recording of Continuing Education Units, on-site program management, program evaluation and issue of certificates.

30.2 Vision

The Center for Continuing Education and Community Outreach will be the portal of entry to gateway of opportunity for professional advancement of individuals, communities, and organizations that form the health workforce of UAE by providing them access to learning, research, and educational services.

30.3 Mission

To facilitate the power of lifelong learning that transforms lives by providing exceptional educational opportunities to graduates of Medicine and Allied Health Professions and employed non-traditional learners within Ajman and neighboring Emirates.

ACADEMIC REGULATIONS

31.0 ACADEMIC REGULATIONS

31.1 Grading, Assessment, Progression and Completion Policies

31.1.1 MBBS Grading Policy

Classification	Marks scored in percentage	Letter Grade
Excellent	> = 86	A
Good	76-85	B
Pass	65-75	C
Fail	< 65	F

31.1.2 Assessment Policy:

Assessments in each Phase will be both formative and summative.

Phase I Assessment Plan

Continuous Assessment: 60% and Professional Examination: 40%

Project Work	End of Course tests	Course Work	Semester Examinations	Professional Examination
5%	5%	20%	30%	40%

Formative Assessments:

This includes:

- TBL (iRAT, tRAT, tAPP)
- Class tests
- Assignments
- Student self-assessment of learning outcomes

Summative Assessments:

A. Project work: Mini-project in Phase I

Mini-project is a group activity undertaken by Phase I students and they are based on WHO-declared Health Days. The aim of this activity is to make students understand the clinical, social, psychological and preventive aspects of common diseases, work in teams and improve their communication and presentation skills. Students are hence assessed for individual and team work, and presentation skills. The scores obtained in the Mini-project will contribute 5% towards summative assessments. Marks obtained in this activity will be included in the calculation of consolidated continuous assessment scores on completion of Phase I courses.

B. End of Course Tests:

The scores obtained in the tests conducted at the end of each course will contribute to 5% of the summative evaluation. Each course will contribute to the summative marks proportionate to their contact hours. This will comprise of MCQ, SAQ and OSPE.

C. Course Work:

The matrix for the course work assessment and the marks allocated for each activity in Phase I are as follows:

Activity	Contributory Marks
Seminars	20
PBL Record book	15
PBL Tutor Evaluation	10
Practical Record book	20
Graded Assignments	10
Reflection	5
Total	80

The 'Course Work' marks will be consolidated course-wise and all activities related to the course including PBL record books, practical records and assignments (except seminars) are required to be completed and submitted to the course chairperson for evaluation on or before the last day of the course. Marks obtained in the seminar presentations will be included in the calculation of consolidated continuous assessment scores on completion of Phase I courses.

NOTE: Late submission will entail deduction of 20% of the marks and no course work will be accepted for evaluation after the start of Semester 1 or 2 examinations for courses taken in the respective semesters.

D. Semester Examinations:

- Two semester examinations will be conducted during Phase I and shall contribute 30% of marks towards overall summative assessment
- Each course will contribute to the semester examination proportionate to their contact hours
- Each semester examination will assess the syllabi covered during the respective semester as follows:
 - Semester 1 examination: Cell, Molecules and Genes, Tissues and Organs, Embryogenesis and Life Cycle

- Semester 2 examination: Metabolism and Nutrition, Internal and External Environment
- Each semester examination will have a theory and practical component:
 - The theory component of the semester examinations will consist of online MCQs and EMI as well as written '*paper-and-pencil*' SAQs / MEQs
 - The practical component of the semester examination will comprise of OSPE and OSCE, and Viva Voce
- Assessment for Language and Communication Skills course and Psychosocial Sciences course will form part of the OSCE only.

E. Professional Examination:

Phase I Professional Examination will be conducted after the Semester 2 examination and will contribute 40% of marks towards overall summative assessment. It will be a combination of theory, practical and viva voce.

The Theory Examination will be in the form of online MCQs and EMIs; SAQs, and MEQs; it shall be integrated and made up of 2 papers, each of 3 hours duration:

- Paper I (Cell, Molecules and Genes, Tissues and Organs, Embryogenesis and Life Cycle)
- Paper II (Metabolism and Nutrition, Internal and External Environment)

The practical examination will be in the form of OSPE/OSCE; Viva Voce will form part of the practical examination. Assessment for Language and Communication Skills course and Psychosocial Sciences course will form part of the OSCE only.

Phase II Assessment Plan

Continuous Assessment: 60% and Professional Examination: 40%

Project Work	End of Course Tests	Course Work	Semester Examinations	Professional Examination
5%	5%	20%	30%	40%

Formative Assessments:

This includes

- TBL (iRAT, tRAT, tAPP)
- Class tests
- Assignments
- Student self-assessment of learning outcomes

Summative Assessments:

A. Assessments in Research Methodology & Project

Theoretical aspects of the course will be assessed by written examination and assignments. Students will work in small groups to carry out a research project, submit a report and present their work which will be evaluated. Submission of the research project report is a requirement of the curriculum to be eligible to appear for the Phase II Professional examination. Assessment in this course will contribute to 5% of the summative evaluation.

B. End of Course Tests (MED 201 – MED 210)

The scores obtained in the tests conducted at the end of each course will contribute to 5% of the summative evaluation. Each course will contribute to the summative marks proportionate to their contact hours. This will comprise of MCQ, OSPE and OSCE.

C. Course Work

The matrix for the course work assessment and the marks allocated for each activity in Phase II are as follows:

Activity	Contributory Marks
Seminars	15
Team-based Learning (TBL)	15
PBL Record book	30
PBL Tutor Evaluation	30
Clinical skills Log book	30
Practical Record book	20
Graded Assignments	10
PBL Peer Evaluation	10
Total	160

The 'Course Work' marks shall be consolidated course-wise and all activities related to the course including PBL record books, clinical skills log book, practical records and assignments (except seminars) are required to be completed and submitted to the course chairperson for evaluation on or before the last day of the course. However, marks obtained in the seminar presentations and TBL shall be included in the calculation of consolidated continuous assessment scores on completion of all Phase II courses.

NOTE: Due notification shall be sent to students by the Course Chairperson for submission of course work. Late submission of practical or PBL record book / Clinical skills log books /

assignments shall entail deduction of 20% of the marks and course work for any course shall not be accepted for evaluation after the start of the respective semester examination. Course work for II MBBS (Phase II Year 1) shall NOT be accepted for evaluation in III MBBS (Phase II Year 2).

D. Semester Examinations:

- Four semester examinations will be conducted over the period of 2 years of Phase II and shall contribute 30% of marks towards overall summative assessment
- Each course will contribute to the semester examination proportionate to their contact hours
- Each semester examination will assess the syllabi covered during the respective semester as follows:
 - Semester 3 examination: Integumentary system, Blood and Immune system, and Cardiovascular system
 - Semester 4 examination: Respiratory system, Alimentary system and Urinary system
 - Semester 5 examination: Endocrine system and Reproductive system
 - Semester 6 examination: Nervous system and Musculoskeletal system
- Each semester examination will have a theory and practical component
- The theory component of the semester examinations will consist of online MCQs and EMI as well as written ‘paper-and-pencil’ SAQs / MEQs
- The practical component of the semester examination will comprise of OSPE / OSCE and Viva Voce

E. Professional Examination

Phase II Professional Examination will be conducted at the end of Semester 6 as a combination of theory, practical and viva-voce.

Components	Portions	Composition	Duration	Mode
Theory Paper I* (IFOM – BSE)	All organ-system courses	Only MCQ consisting of 160 test-items	4 hrs.	Online
Theory Paper II	Integrating all organ-systems	Only SAQ and MEQ	3 hrs.	‘Paper-and-pencil’
Practical Examination	Integrated among courses	Integrated OSPE and OSCE (including Viva Voce)	3 hrs.	Face-to-face

**The Theory paper I is the International Federation of Medicine (IFOM) – Basic Sciences examination (BSE) conducted online by the National Board of Medical Examiners (NBME). The syllabus for the examination includes courses covered in both Phases I and II.*

The student must appear for each component of the examination (Theory paper I, Theory paper II, Practical and Viva Voce). Absence in any one component shall be considered as a disqualification from the examination.

Eligibility for appearing in the Professional Examination for Phase I and II:

Eligibility for appearing in the Professional examination for Phase I and II requires that the student fulfill the following criteria:

- It is mandatory to attend all courses in the Phase
- The student should have not less than 80% attendance in each course of the Phase
- In addition, the student should have a cumulative attendance of not less than 80% for the Phase
- The student should have a continuous assessment marks of not less than 60%
- Those students with less than 80% attendance and / or less than 60% Continuous Assessment shall be detained from appearing for the Phase I or II Professional Examination and made to repeat a year.

Re-sit Examination for Phase I and II

- Those students who appeared for the Final Examination and failed will have a chance to appear for the Re-sit Examination which will be held within 6 weeks after the regular Final Examination is conducted
- The students who fail in the Re-sit Examination shall be on probation and would have to re-register and repeat the year along with the next regular batch
- They would then take the Final Examination at the end of the repeat year on satisfaction of the eligibility criteria
- Those students who have not satisfied the eligibility criteria for appearing in the professional examination even after the repeat year will be dismissed from the program as students can repeat the year only once
- Those students who fail again in the Final Examination after the repeat year, will have the final chance to appear in the second Re-sit Examination held within 6 weeks of the Final Examination
- Those who fail in the second Re-sit examination will be asked to leave the program
- Absenteeism will be considered as an attempt

Phase III Assessment Plan

(The below Assessment Plan is applicable for 2013 batch of students of Phase III who are in IV MBBS in the AY 2016-17)

A. ASSESSMENT POLICY

Continuous Assessment: 60% and Professional Examination: 40%

Phase III	Course Work	End of Clerkship Tests	Semester Examinations	Professional Examination	Total
%	10%	20%	30%	40%	100%
Marks	100	200	300	400	1000

Formative Assessment:

This includes:

- TBL
- RIME
- Direct Observation of Clinical Skills (DOCS)
- Assessment of Clinical Procedures (ACP)
- Continuous feedback during bedside and ambulatory care teaching, and small group learning

Summative Assessment:

A. Course Work: 10% amounting to 100 / 1000 is distributed as:

Activity	IV MBBS	V MBBS
Seminars	10	10
Clinical Log Books	10	15
DOCS / ACP	10	15
Grand Clinics	10	-
Direct Observation of Professional Attributes (DOPA)	10	10
Total	50	50

- ❖ **Seminar:** Each student will be given an opportunity to present a seminar as part of a group and will be evaluated on the basis of a standard rubric. *If the student misses his / her scheduled presentation of seminar due to unexcused absence, he / she shall be answerable to the Student Welfare Committee.*
- ❖ **TBL:** Team-based Learning is a student-centered learning strategy and fosters critical

thinking, problem-solving and teamwork attributes in the student. TBL will be the predominant teaching / learning strategy for the multi-system course and shall be evaluated as follows:

iRAT	tRAT	tAPP
30%	35%	35%

The scores obtained in the TBL shall be considered as part of formative assessment.

- ❖ **Clinical Log Books:** Each student is expected to document fully worked-up cases as detailed in the instruction provided in the clinical log books. The log books shall be evaluated by the clinical supervisor of the respective clinical training site by the end of each posting. *Completed Log books for any given posting are required to be submitted on the day of the end of posting OSCE for evaluation.*

NOTE: Late submission of log books will entail deduction of 20% of the marks.

- ❖ **Direct Observation of Clinical Skills (DOCS) & Assessment of Clinical Procedures (ACP):** The trainee is expected to clerk patients, and perform clinical skills and procedures as specified in the Clinical Training Manual. An online portal is available for documenting the same. These skills and procedures are evaluated in the form of DOCS and ACP by the faculty. The records shall reflect a wide variety of clinical conditions including all age groups, both genders, and acute and chronic conditions. It is the responsibility of the student to ensure that the DOCS / ACP for each rotation are completed and evaluated online during the rotation itself by the clinical supervisor of the respective clinical training site and a hard copy of the consolidated report is duly submitted to the Clerkship Coordinator on the day of OSCE. No DOCS / ACP evaluations for the specific posting will be considered after the last day of posting / end of posting OSCE date. The average of scores obtained in the DOCS / ACP shall contribute towards summative assessment.
- ❖ **Grand Clinics:** In this activity, a complete history-taking and physical examination of a real patient has to be performed under direct observation from the inpatient or outpatient pool and presented to the entire class. The investigations / management plan is further discussed which is evaluated using a standard rubric. Grand clinics is expected to enhance critical-thinking, problem-solving, presentation skills and this activity fulfils the learning outcomes related to medical knowledge, communication and clinical skills, and patient care. The students are required to refrain from presenting cases copied from patients' files. Each student shall be given an opportunity to present in the grand clinics in each posting. *If the student misses his / her scheduled presentation of grand clinics due to unexcused absence, he / she lose the chance for presentation and shall be answerable to the Student Welfare Committee.*

- ❖ **Direct Observation of Professional Attributes (DOPA):** Professional attributes will be assessed based on a standard rubric during each clerkship by the clerkship instructor / supervisor.

NOTE: No course work shall be accepted for evaluation after the start of Semester 8 examination in IV year and Semester 10 examination in V year. Course work for year IV will NOT be accepted for evaluation in year V.

B. End of Clerkship Tests: 20% amounting to 100 / 1000 is distributed as:

Test Components	Contribution
Theory	80 marks (40%)
OSCE	120 marks (60%)
Total	200 marks (100%)

- Each student should have not less than 80% attendance in the clinical postings and theory sessions separately to be eligible to appear for the end of clerkship tests.
- Even students with excused and approved absences are required to do compensatory posting and improve their attendance to not less than 80% to be eligible to take the end of clerkship tests
- Those with unapproved absences shall have to apply for compensatory posting and shall require approval by the Dean / Associate Dean (Clinical) who shall consider each request on a case-to-case basis. Upon consideration, only one chance for compensation shall be provided upon payment of an amount of AED 250/- per day.

C. Semester Examinations: The 4 semester examinations in Phase III together will contribute 30% of marks amounting to 300/1000:

- Semester 7 and 8 examinations will be conducted in IV MBBS and Semester 9 and 10 examinations in V MBBS.
- Semester 7 and 9 examinations will have only a theory component as all students do not have a uniform clinical learning experience at this point;
- Semester 8 and 10 examinations will have theory and clinical components as all students would have completed a 40 – week clinical rotation.
- The Theory paper will consist of MCQ / EMI / SAQ / MEQ. The content of the theory paper will be from the portions covered in the clerkships completed in the respective semester for each group of students.
- The clinical component in semester 8 will consist of an integrated OSCE and semester 10 will consists, in addition to OSCE, an integrated OSLE that will integrate across all the clinical postings covered during Phase III.

The weightage from each semester examination for calculation of continuous assessment with clinical to theory proportion being 60:40 is as follows:

Semester	Theory Paper		OSCE / OSLER
Semester 7	25 marks	Total 60 marks	-
Semester 8	35 marks		90 marks (Only OSCE)
Semester 9	25 marks	Total 60 marks	-
Semester 10	35 marks		90 marks (OSCE & OSLER)
Total	120 marks		180 marks
Total Semester CA	300 marks		

D. Professional Examination: 40% amounting to 400 / 1000 with clinical to theory proportion being 60:40

Components	Portions	Composition	Duration	Mode
Theory Paper I* (IFOM-CSE)	All organ-systems	MCQ consisting of 160 test-items	4 hrs.	Online
Theory Paper II	Integrating all organ-systems	SAQ and MEQ	3 hrs.	'Paper-and-Pencil'
Clinical Examinations	Integrated among clinical disciplines	Integrated OSCE/OSLER	-	Face-to-face

**The Paper I is the International Federation of Medicine (IFOM) - Clinical Sciences Examination (CSE) conducted online by the National Board of Medical Examiners (NBME), USA*

B. Grading Policy

Classification	Marks scored in percentage	Letter Grade
Excellent	> = 86	A
Good	76-85	B
Pass	65-75	C
Fail	< 65	F

C. ELIGIBILITY FOR APPEARING IN THE PHASE III PROFESSIONAL EXAMINATION

Eligibility for appearing in the Phase III Professional Examination requires that the student fulfills the following criteria:

- It is mandatory to attend all clinical rotations in Phase III
- The student should have not less than 80% attendance in each clinical rotation of Phase III
- In addition, the student should have a cumulative attendance of not less than 80% for Phase III
- The student should have a continuous assessment marks of not less than 60%
- If the student has less than 80% attendance and or less than 60% Continuous Assessment, he / she shall be detained from appearing for the Professional Examination.

Phase III Assessment Plan for 2012 batch students in V MBBS in AY 2016-17

The following Assessment plan shall be applicable:

Continuous Assessment: 60% and Professional Examination: 40%

Phase III	End of Course / Clerkship Tests	Course Work	Semester Examinations	Professional Examination	Total
%	10%	20%	30%	40%	100%
Marks	100	200	300	400	1000

A. End of Course / Clerkship Tests: 10% amounting to 100 / 1000 is distributed as:

Activity	Contribution
Course tests conducted at the end of each course	20 marks
OSCE conducted at the end of each rotation (IV year)	30 marks
OSCE conducted at the end of each rotation (V year)	50 marks
Total	100 marks

B. Course Work: 20% amounting to 200 / 1000 is distributed as:

Activity	IV MBBS	V MBBS
Seminars	10	10
Tutor evaluation of SGL	-	10
Team-based Learning sessions	10	-

CBL Record Book	10	-
Clinical Log Books	15	30
DOCS	20	30
Grand Clinics	15	
Direct Observation of Professional Attributes (DOPA)	20	20
Total	100	100

There are no changes to the contribution and calculation of Semester and Professional Examination marks for 2012 batch and is the same as published in the current Student Handbook (2016-17).

D. RE-SIT EXAMINATION FOR PHASE III

- Those students who were detained due to lack of attendance and / or continuous assessment marks or those students who appeared for the Phase III Professional Examination and failed will have a chance to appear for the Re-sit Examination which will be held within 6 months after the regular examination is conducted
- Remedial Clinical Posting: These students shall undergo structured remedial clinical postings in the core disciplines before the re-sit examination.
- The student is required to pay an amount of AED 250/- per session for the remedial clinical postings. The student should have not less than 80% attendance in each posting
- The student shall be given a chance to improve continuous assessment marks during remedial clinical postings which shall be calculated as follows:

Phase III	End of Clerkship OSCE	Course Work	Semester Examination	Professional Examination	Total
%	30%	10%	20%	40%	100%
Marks	300	100	200	400	1000
Comments	Mean of end of clerkship OSCEs in core disciplines	Seminar: 10 Grand Clinics: 20 DOCS/ACP: 30 Clinical Log books: 20 DOPA: 20	Only Theory examination encompassing Phase III portions	-	-

- Those students who failed in the re-sit examination will have to again repeat the structured remedial clinical posting in the core disciplines.
- They will have the final chance to appear for the second Re-sit Examination held within

6 months of the first re-sit examination

- Those who fail in the second Re-sit examination will be asked to leave the program
- Absenteeism will be considered as an attempt

Requirements for Passing the Professional / Re-sit Examination (Phase I / II / III)

- The student must appear for each component (Theory paper I, Theory paper II, Practical / Clinical and Viva-Voce) of the examination
- Absence in any one component shall be considered as a disqualification from the examination
- An aggregate score of 65% in both theory and practical / clinical examinations is required for passing the professional examination

31.1.3 Progression Policy

- The progress of students through the semesters within each Phase would be continuous
- Those students who fail in Phase I / II examinations will not be allowed to progress to the next phase
- Those students who fail in Phase III examinations will not be eligible to commence the internship

31.1.4 Completion Policy

All MBBS students are expected to study and note the program and course details provided in the student handbook and the university catalog listed under the College of Medicine. For the degree, all requirements under the terms of the catalog in effect at and after their admission must be met.

Candidates must satisfy all university, college and Major's requirements (if any) established by the faculty members. The individual programs may have higher standards and/or more restrictive requirements as compared to the university minimum requirements.

The university mandates the following general degree completion requirements in order for students to receive their degrees. Each student must:

- Be continuously enrolled in the program from admission to graduation.
- Have satisfied all conditions of his or her admission.
- Successfully complete a comprehensive examination or equivalent as determined by the individual degree program.

The students shall fulfill the requirements of each course as prescribed, published and made available to the students. The student shall be responsible for attending all the classes and completing the requirements of the chosen program of study.

The student will be commended for the award of **Bachelor of Medicine and Bachelor of Surgery [MBBS] Degree** upon:

- Submission of a research project
- Successful completion of a comprehensive Professional Examination (Phase III) with an overall score of not less than 65%
- Successful completion of 52 weeks of Compulsory Resident Rotating Internship (CRR) program with satisfactory evaluation
- The student shall complete the program within a maximum period of 10 years.

31.1.5 Appeal Policy

A candidate who fails in any subject in the professional examination can appeal for retotaling. No revaluation shall be allowed under any circumstances. Applications for re-totaling should be made within 30 days after the publication of results. The Dean Assessment & Evaluation may appoint a member of the Assessment Committee for review and retotaling. If any error is noticed, the correction and amendment shall be made by the Dean, Assessment & Evaluation.

31.1.6 Attendance Policy

The 100% attendance is mandatory. A student must attend all scheduled lectures, practical, tutorials, class tests or any other form of teaching learning activities. In case, if a student is unable to attend the classes due to medical reasons, renewal of residence permit abroad, Hajj leave etc. a waiver of up to a maximum of 20% attendance will be considered by the attendance review committee, subject to the submission of medical certificate or any other supporting documents related to the absence from the class. Student should have not less than 80% in each course of the Phase. In addition, the student should have cumulative attendance not less than 80% in the Phase.

31.2.1 BPT Grading Policy

Classification	Marks Scored in Percentage	Letter Grade
Excellent	≥ 90	A+
Very Good	80 - 89	A
Good	70 - 79	B
Pass	60 - 69	C
Fail	< 60	F

31.2.2 Assessment Policy

Assessment shall be both formative and summative

31.2.2.1 Formative Assessment:

This is a continuous process carried throughout the period of study and consists of tutorials, interactive computer-based tests, class tests and sessional examination.

31.2.2.2 Summative Assessment:

Theory examination will be in the form of SAQs and MCQs. The practical examination will be in the form of experiments / laboratory exercises/ OSPEs and OSCEs. Viva Voce will form a part of the practical examination.

31.2.3 Progression Policy

- Normal duration of the program shall be 4 years including 6 months internship. Maximum Permissible duration of the BPT program is 6 years.
- First BPT Professional Examination shall be held at the end of second term in the courses of Human Behavior and Socialization, Anatomy, Physiology and Biochemistry and Basic Medical Electronics and Computer Applications.
- Second BPT Professional Examination shall be held at the end of the fourth term in the courses of Exercise Therapy and Massage, Electrotherapy, Biomechanics of Human motion, Pathology, Pharmacology and Microbiology.
- Final BPT Professional Examination shall be held in the courses of Physiotherapy in Musculoskeletal Disorders, Physiotherapy in Cardiorespiratory Disorders, Physiotherapy in Neurosciences, Physiotherapy in General Medical, Surgical, Obstetrics and Gynecological conditions, Physiotherapy in Community Health, Research, Biostatistics, Professional Issues and Management and Concepts of Bioengineering.

- It is mandatory for all the students to appear for the Professional Examination. Absenteeism in any Professional / Supplementary examination shall be considered as an attempt.
- All the Professional Examination shall be conducted in two parts as:
 - a) Theory Examination
 - b) Clinical / Practical & Viva Voce Examination

Candidates should have appeared for all components of the professional examinations (theory, clinical, practical, OSPE, OSCE, Viva-Voce, etc.) to be considered for assessment. Failure to appear for any component of the examination will be considered as absence from the whole of the examination.

- A candidate who fails to appear for the professional examination, without valid / approved reason, does not qualify to appear for Supplementary examination.
- A candidate who fails in more than two courses in the main and / or first supplementary examination conducted within 6 weeks after First BPT Professional Examination, will not be promoted to Second BPT.
- A candidate who fails in one or two courses in First BPT Professional Examination, will be promoted to Second BPT and such a candidate should pass all the course / courses before appearing for Second BPT Professional Examination.
- For supplementary students, an interval of 6 months is required between the two consecutive professional examinations.
- A candidate who fails in four successive attempts in the First Year BPT Professional Examination will have to discontinue the BPT Program.
- Students should pass in all the courses in the 2nd Year subjects before they are allowed to enter the third year of clinical training.
- A candidate who fails in any of the courses of 2nd Year BPT Professional Examination will be given a chance to appear for the supplementary examinations conducted within 6 weeks after the Second BPT Professional Examination, and should pass all the courses before being permitted to continue to Third BPT.
- Candidates who appear for Final BPT Professional Examination should pass in all the courses before being considered eligible for internship.
- Supplementary Examinations for candidates who failed in the Final BPT Professional Examination shall be conducted at intervals of 6 months.
- The duration of theory examinations shall be of 2 / 3 hours and the question papers shall consist of Multiple Choice Questions and Short Answer Questions.
- A candidate who fails in any of the examinations shall have the right to apply for re-totaling. No revaluation will be allowed under any circumstances.

- The compulsory rotating internship will culminate in the submission of a project in the area chosen by the student. The student will be assigned a supervisor for the same.

31.2.4 Completion Policy

All students are expected to study the program and course details provided in the student handbook and undergraduate catalog. For award of the degree all requirements under the terms of any catalog in effect at or after their admission must be met. Candidates must satisfy all university requirements and program requirements established by the faculty of pharmaceutical science. The individual programs may have higher standards and / or more restrictive requirements as compared to the university minimum requirements.

The university mandates the following general degree completion requirements in order for students to receive their degrees. Each graduate student must:

- Be continuously enrolled in the program from admission to graduation.
- Have satisfied all conditions of his or her admission, such as provisional admission.
- Successfully complete a comprehensive examination or equivalent as determined by the individual degree program.
- Submit a thesis or research project, if required by the academic program that meets the format requirements set forth in the College Thesis Manual.

The students shall fulfill the requirements of each course as prescribed and published and made available to the students. The student shall be responsible for attending all the classes and completing the requirements of the chosen program of study.

Specific Completion Requirements of the Bachelor of Physiotherapy (BPT)

- Complete the BPT program with an overall score of 60% or higher.
- Students must pass all the courses in the 1st & 2nd year before they are allowed to enter 3rd year.
- Students who appear for Final BPT Professional Examination should pass in all the courses before being considered eligible for internship.
- Students who do not submit their project on or before the specified time will not be eligible for graduation in that year.

The Gulf Medical University confers degrees and issues statements of attestations on fulfilling all course completion requirements of the program for which the student is registered.

Only students who have successfully completed their degree requirements by the end of the program for which they applied to graduate are entitled for conferral of degrees. In witness

of the degree conferred, a statement of graduation is entered in the permanent records of the graduates and their degrees are released. Such students can proceed to receive their degree certificates and participate in the convocation ceremony.

31.2.5 Appeal Policy

A candidate who fails in any subject in the professional examination can appeal for retotaling. No revaluation shall be allowed under any circumstances. Applications for re-totaling should be made within 30 days after the publication of results. The Dean Assessment & Evaluation shall appoint a member of the examination board for review and retotaling. If any error is noticed, the correction and amendment shall be made by the Dean, Assessment & Evaluation.

31.2.6 Attendance Policy

The 100% attendance is mandatory for course completion requirements. A student must attend all scheduled lectures, practical, tutorials, class tests or any other form of teaching learning activities. In case, if a student is unable to attend the classes due to medical reasons, renewal of residence permit abroad, Hajj leave etc. a waiver of up to a maximum of 20% attendance will be considered by the attendance review committee, subject to the submission of medical certificate or any other supporting documents related to the absence from the class. In case the attendance is below 80% in any course, this will be treated as non-fulfillment of the credit hour requirement and **F** grade will be awarded automatically and the student shall be asked to repeat the course again.

31.2.7 Continuous Assessment

The students will be evaluated for their participation and performance in class, quizzes, tutorial, assignments, lab work, practical assessments, class tests and mid semester examinations, which shall contribute to both continuous and summative assessments.

31.3.1 DMD Grading Policy

Classification	Marks scored in Percentage	Letter Grade	Grade Value
Pass	90 - 100	A	4
	85 - 89	B+	3.5
	80 - 84	B	3
	75 - 79	C+	2.5
	70 - 74	C	2
Fail	< 70	F	0

31.3.2 Assessment Policy

Assessment shall be both formative and summative

31.3.2.1 Formative Assessment:

This is a continuous process carried throughout the period of study and consists of weekly or end of unit class-tests, tutorials, interactive computer-based tests, and / or feedback during small group discussions.

31.3.2.2 Summative Assessment:

Theory examination will be in the form of essays, SAQs, MCQs and EMIs; and MEQs. The practical examination will be in the form of experiments / laboratory exercises/ OSPEs and OSCEs. Viva Voce will form a part of the practical examination.

31.3.3 Progression Policy

Normal duration of the program shall be 5 years (10 semesters). Each semester is made up of about 15 weeks. Maximum Permissible duration of the DMD course is 10 years.

The program is credit-based. 6-10 courses are offered in different semesters. Each course carries a specified number of credit hours. A student must earn a GPA of 2.0 or above in each of the courses offered in a semester and a CGPA of 2.0 to successfully complete that semester.

From the Academic Year 2013 – 2014 onwards, students are required to clear all the Basic Science Courses & Pre-clinical courses (Semester 1 to 6) before proceeding to Clinical courses (Semester 7 to 10).

Academic Probation is applicable to any student who scores **CGPA** less than **2.0** in any semester during the program. A maximum of 2 retakes is available to complete the course in the semester where academic probation is indicated. Non-completion of the course in any

semester within the specified limit of retakes shall result in dismissal of the student from the program.

If in any of the courses he/she fails to earn a GPA of 2.0, and that course is a prerequisite for course(s) in the subsequent semesters, he/she shall not be allowed to register for that course.

At any time during the program, the credit load in any semester should not exceed 24 credits. Students who have a CGPA of less than 2.0 shall not be permitted to register for new courses until they have successfully completed all previous failed courses.

A student who discontinues the academic program for any reason and rejoins the program at a later date, shall be governed by the rules, regulations, courses of study and syllabi in force at the time of his/her rejoining the program.

31.3.4 Completion Policy

All DMD students are expected to study and note the program and course details provided in the student handbook and the university catalog listed under the College of Dentistry. For the degree, all requirements under the terms of the catalog in effect at and after their admission must be met.

Candidates must satisfy all university, college and Major's requirements (if any) established by the faculty members. The individual programs may have higher standards and/or more restrictive requirements as compared to the university minimum requirements.

The university mandates the following general degree completion requirements in order for students to receive their degrees. Each student must:

- Be continuously enrolled in the program from admission to graduation.
- Have satisfied all conditions of his or her admission.
- Successfully complete a comprehensive examination or equivalent as determined by the individual degree program.

The students shall fulfill the requirements of each course as prescribed, published and made available to the students. The student shall be responsible for attending all the classes and completing the requirements of the chosen program of study.

Specific Completion Requirements of the DMD Program includes:

- Completion of 190 credits
- A minimum CGPA of 2.0
- A minimum pass mark of 70% (Grade C) for each course (from 2011 batch onwards)

- A minimum pass mark of 60% (Grade D) for progression only (2008 – 2010 batches)
- All course specific number of procedures must be satisfactorily completed.

31.3.5 Appeal Policy

A candidate who fails in any subject in the professional examination can appeal for retotaling. No revaluation shall be allowed under any circumstances. Applications for re-totaling should be made within 30 days after the publication of results. The Dean Assessment & Evaluation may appoint a member of the Assessment Committee for review and retotaling. If any error is noticed, the correction and amendment shall be made by the Dean, Assessment & Evaluation.

31.3.6 Attendance Policy

The 100% attendance is mandatory for fulfillment of credit requirements. A student must attend all scheduled lectures, practical, tutorials, class tests or any other form of teaching learning activities. In case, if a student is unable to attend the classes due to medical reasons, renewal of residence permit abroad, Hajj leave etc. a waiver of up to a maximum of 20% attendance will be considered by the attendance review committee, subject to the submission of medical certificate or any other supporting documents related to the absence from the class. In case the attendance is below 80% in any course, this will be treated as non-fulfillment of the credit hour requirement and **F** grade will be awarded automatically and the student shall be asked to register again for the course.

31.3.7 Continuous Assessment

The students will be evaluated for their participation and performance in class, class-tests, tutorials, assignments, lab work, practical assessments, and mid semester examinations, which shall contribute to both continuous and summative assessments.

31.4.1 Pharm D Grading Policy

Classification	Marks scored in Percentage	Letter Grade	Grade Value
Pass	90 - 100	A	4
	85 - 89	B+	3.5
	80 - 84	B	3
	75 - 79	C+	2.5
	70 - 74	C	2
Fail	< 70	F	0

31.4.2 Assessment Policy

Assessment shall be both formative and summative

31.4.2.1 Formative Assessment:

This is a continuous process carried throughout the period of study and consists of weekly or end of unit quizzes, tutorials, interactive computer-based tests, and feedback during small group discussions.

31.4.2.2 Summative Assessment:

Theory examination will be in the form of essays, SAQs, MCQs and EMIs; and MEQs. The practical examination will be in the form of experiments / laboratory exercises/ OSPEs and OSCEs. Viva Voce will form a part of the practical examination.

31.4.3 Progression Policy

Normal duration of the program shall be 4 ½ years (9 semester) didactic and 35 weeks of Advanced Pharmacy Practice Experience (APPE). Each semester is made up of about 15 weeks. Maximum Permissible duration of the Pharm D course is 10 years.

The program is credit-based. 6-10 courses are offered in different semesters. Each course carries a specified number of credit hours. A student must earn a GPA of 2.0 or above in each of the courses offered in a semester and a CGPA of 2.0 to successfully complete that semester.

Academic Probation is applicable to any student who scores **CGPA** less than **2.0** in any semester during the program study. A maximum of 2 retakes is available to complete the course in the semester where academic probation is indicated. Non-completion of the course in any semester within the specified retakes limit shall result in dismissal of the student from the program.

If in any of the courses he/she fails to earn a GPA of 2.0, and that course is a prerequisite for a course(s) in the subsequent semesters, he /she shall not be allowed to register for that

course.

At any time the credit load in any semester should not exceed 24 credits. Students who have a CGPA of less than 2.0 shall not be permitted to register for new courses until they have successfully completed all previous failed courses.

Only those students who have successfully completed all the courses till 8 shall become eligible to register for semester 9.

Only those students who have successfully completed the semester 1 to 9 shall become eligible to commence their APPE.

A student who discontinues the academic program for any reason and rejoins the program at a later date, shall be governed by the rules, regulations, courses of study and syllabi in force at the time of his/her rejoining the program.

31.4.4 Completion Policy

All students are expected to study the program and course details provided in the student handbook and undergraduate catalog. For award of the degree all requirements under the terms of any catalog in effect at or after their admission must be met. Candidates must satisfy all university requirements and program requirements established by the faculty of pharmaceutical science. The individual programs may have higher standards and / or more restrictive requirements as compared to the university minimum requirements.

The university mandates the following general degree completion requirements in order for students to receive their degrees. Each graduate student must:

- Be continuously enrolled in the program from admission to graduation.
- Have satisfied all conditions of his or her admission, such as provisional admission.
- Successfully complete a comprehensive examination or equivalent as determined by the individual degree program.
- Submit a thesis or research project, if required by the academic program that meets the format requirements set forth in the College Thesis Manual.

The students shall fulfill the requirements of each course as prescribed and published and made available to the students. The student shall be responsible for attending all the classes and completing the requirements of the chosen program of study.

Specific Completion Requirements of the Pharm D Program include:

- Completion of 204 credits
- A minimum CGPA of 2.0
- A minimum pass marks of 70% (Grade C) for each course
- A minimum marks of 60% (Grade D) for progression only (2008 – 2010 batches)

The Gulf Medical University confers degrees and issues statements of attestations on fulfilling all course completion requirements of the program for which the student is registered.

Only students who have successfully completed their degree requirements by the end of the program for which they applied to graduate are entitled for conferral of degrees. In witness of the degree conferred, a statement of graduation is entered in the permanent records of the graduates and their degrees are released. Such students can proceed to receive their degree certificates and participate in the convocation ceremony.

31.4.5 Appeal Policy

A candidate who fails in any subject in the professional examination can appeal for retotaling. No revaluation shall be allowed under any circumstances. Applications for re-totalling should be made within 30 days after the publication of results. The Dean Assessment & Evaluation shall appoint a member of the examination board for review and retotaling. If any error is noticed, the correction and amendment shall be made by the Dean, Assessment & Evaluation.

31.4.6 Attendance Policy

The 100% attendance is mandatory for fulfillment of credit requirements. A student must attend all scheduled lectures, practical, tutorials, class tests or any other form of teaching learning activities. In case, if a student is unable to attend the classes due to medical reasons, renewal of residence permit abroad, Hajj leave etc. a waiver of up to a maximum of 20% attendance will be considered by the attendance review committee, subject to the submission of medical certificate or any other supporting documents related to the absence from the class. In case the attendance is below 80% in any course, this will be treated as non-fulfillment of the credit hour requirement and F grade will be awarded automatically and the student shall be asked to register again for the course.

31.4.7 Continuous Assessment

The students will be evaluated for their participation and performance in class, quizzes, tutorial, assignments, lab work, practical assessments, class tests and mid semester examinations, which shall contribute to both continuous and summative assessments.

31.5.1 BBMS Grading Policy

Classification	Marks scored in Percentage	Letter Grade	Grade Value
Pass	90 - 100	A	4
	85 - 89	B+	3.5
	80-84	B	3
	75-79	C+	2.5
	70-74	C	2.0
Fail	< 70	F	0

31.5.2 Assessment Policy

Assessment shall be both formative and summative.

31.5.2.1 Formative Assessment

This is a continuous process carried throughout the period of study and consists of weekly or end of unit informal class tests, assignments, assessment of learning outcomes by faculty members, students' self-assessment of learning outcomes and feedback during small group discussions. The feedback of formative assessments is used for the improvement of learning.

31.5.2.2 Summative Assessment

Summative assessments include Continuous Assessment and End Semester Examinations. Theory examination will be in the form of MCQs, SAQs, EMIs and MEQs. The practical examination will be in the form of Objective Structured Practical Examination (OSPE) or Observed Standardized Practical Examination. Viva Voce will form a part of the practical examination.

31.5.3 Progression Policy

Normal duration of the program shall be four years (8 semesters). Each semester is made up of about 15 weeks. Maximum Permissible duration of the BBMS course is 6 years.

The program is credit-based. 5 to 10 courses are offered in each semester totaling to a credit load of 15 to 17 distributed across the 8 semesters.

Each course carries a specified number of credits. A student must earn a GPA of 2.0 or above in each of the courses offered in a semester and a CGPA of 2.0 or above to successfully complete that semester.

A student shall be placed on probation and allowed to progress to the next semester if he/she has < 2.0 GPA in any of the courses and a CGPA of <2.0 in the previous semester.

He/she will have to improve his/her GPA to 2.0 in the respective course(s) in not more than 2 successive retakes, failing which he/she will be dismissed from the program.

If in any of the courses he/she fails to earn a GPA of 2.0, and that course is a prerequisite for a course(s) in the subsequent semesters, he /she shall not be allowed to register for that course.

At any time the credit load in any semester should not exceed 24 credits. Students who have a CGPA of less than 2.0 shall not be permitted to register for new courses until they have successfully completed all previous failed courses.

A student, who discontinues the academic program for any reason and rejoins the program at a later date, shall be governed by the rules, regulations, courses of study and syllabi in force at the time of his/her rejoining the program.

31.5.4 Completion Policy

All BBMS students are expected to study and note the program and course details provided in the student handbook and the university catalog listed under the College of Medicine. For the degree, all requirements under the terms of the catalog in effect at and after their admission must be met.

Candidates must satisfy all university, college and Major's requirements (if any) established by the faculty members. The individual programs may have higher standards and/or more restrictive requirements as compared to the university minimum requirements.

The university mandates the following general degree completion requirements in order for students to receive their degrees. Each student must:

- Be continuously enrolled in the program from admission to graduation.
- Have satisfied all conditions of his or her admission.
- Successfully complete a comprehensive examination or equivalent as determined by the individual degree program.

The students shall fulfill the requirements of each course as prescribed, published and made available to the students. The student shall be responsible for attending all the classes and completing the requirements of the chosen program of study.

Specific Completion Requirements of the BBMS Program includes:

- Completion of 128 credits

- Obtaining a minimum GPA of 2.0
- Obtaining a minimum pass mark of 70% (Grade C) for each course
- Submitting and defending a project work up to the satisfaction of the project judging committee with a minimum pass mark of 70%

31.5.5 Appeal Policy

A candidate who fails in any subject in the professional examination can appeal for retotaling. No revaluation shall be allowed under any circumstances. Applications for re-totaling should be made within 30 days after the publication of results. The Dean Assessment & Evaluation may appoint a member of the Assessment Committee for review and retotaling. If any error is noticed, the correction and amendment shall be made by the Dean, Assessment & Evaluation.

31.5.6 Attendance Policy

The 100% attendance is mandatory for fulfillment of credit requirements. A student must attend all scheduled lectures, practical, tutorials, class tests or any other form of teaching learning activities. In case, if a student is unable to attend the classes due to medical reasons, renewal of residence permit abroad, Hajj leave etc. a waiver of up to a maximum of 20% attendance will be considered by the attendance review committee, subject to the submission of medical certificate or any other supporting documents related to the absence from the class. In case the attendance is below 80% in any course, this will be treated as non-fulfillment of the credit hour requirement and F grade will be awarded automatically and the student shall be asked to register again for the course.

31.5.7 Continuous Assessment

The students will be evaluated for their participation and performance in class, class-tests, tutorials, assignments, lab work, practical assessments, and mid semester examinations, which shall contribute to both continuous and summative assessments.

31.6.1 BHS Grading Policy

Classification	Marks scored in Percentage	Letter Grade	Grade Value
Pass	90 - 100	A	4
	85 - 89	B+	3.5
	80-84	B	3
	75-79	C+	2.5
	70-74	C	2.0
Fail	< 70	F	0

31.6.2 Assessment Policy

Assessment shall be both formative and summative.

31.6.2.1 Formative Assessment

This is a continuous process carried throughout the period of study and consists of weekly or end of unit class tests, tutorials, interactive computer-based tests, and feedback during small group discussions.

31.6.2.2 Summative Assessment

Theory examination will be in the form of essays, SAQs, and MEQs; objective type questions like, MCQs. The practical examination will be in the form of wet experiments / laboratory exercises / OSPEs and OSCEs. Viva Voce will form a part of the practical examination. Additional assessment methods appropriate in measuring the course specific outcomes have been selected.

The final examination at the end of each course shall be the End Semester Examination.

A Practicum manual will be prepared with details of the rotations and the expected learning objectives as listed under the courses. The program outcomes shall be assessed as listed in the course outline of the internship. Logbooks will be used to keep a record of the skills/procedures with entries for self-reflection and self-assessment.

Rubrics for assessing the performance will help in a uniform and objective evaluation of all clinical experiences.

31.6.3 Progression Policy

Normal duration of the BHS program shall be four years. Each semester is made up of about 15 weeks. Maximum Permissible duration of the BHS course is 6 years.

The program is credit-based. 5 to 8 courses are offered in each semester totaling to a credit load of 15 to 17 distributed across the 8 semesters.

Each course carries a specified number of credit hours. A student must earn a GPA of 2.0 or above in each of the courses offered in a semester and a CGPA of 2.0 or above to successfully complete that semester.

A student shall be placed on probation and allowed to progress to the next semester if he/she has < 2.0 GPA in any of the courses and a CGPA of <2.0 in the previous semester.

He/she will have to improve his/her GPA to 2.0 in the respective course(s) in not more than 2 successive retakes, failing which he/she will be dismissed from the program.

If in any of the courses he/she fails to earn a GPA of 2.0, and that course is a prerequisite for a course(s) in the subsequent semesters, he /she shall not be allowed to register for that course.

At any time, the credit load in any semester should not exceed 24 credits. Students who have a CGPA of less than 2.0 shall not be permitted to register for new courses until they have successfully completed all previous failed courses.

A student, who discontinues the academic program for any reason and rejoins the program at a later date, shall be governed by the rules, regulations, courses of study and course syllabi in force at the time of his/her rejoining the program.

31.6.4 Completion Policy

All BHS students are expected to study and note the program and course description provided in the student handbook and the university catalog listed under the College of Allied Health Sciences. For the degree, all requirements under the terms of the catalog in effect at and after their admission must be met.

Candidates must satisfy all university, college and Majors requirements established by the faculty members. The individual programs may have higher standards and/or more restrictive requirements as compared to the university minimum requirements.

The university mandates the following general degree completion requirements in order for students to receive their degrees. Each student must:

- Be continuously enrolled in the program from admission to graduation.
- Have satisfied all conditions of his or her admission.
- Successfully complete a comprehensive examination or equivalent as determined by the individual degree program.
- Submit a thesis or research project, if required by the academic program, to the University that meets the format set forth in the Thesis Manual.

The students shall fulfill the requirements of each course as prescribed and published and made available to the students. The student shall be responsible for attending all the classes and completing the requirements of the chosen program of study.

Specific Completion Requirements of the BHS Program include:

- Successful completion of 128 credit hours.
- A minimum pass mark of 70% (Grade C) for each course.
- A minimum CGPA of 2.0.
- Submitting and defending a project work up to the satisfaction of the project judging committee with a minimum pass mark of 70%.

31.6.5 Appeal Policy

A candidate who fails in any subject in the professional examination can appeal for retotaling. No revaluation shall be allowed under any circumstances. Applications for re-totalling should be made within 30 days after the publication of results. The Dean Assessment & Evaluation may appoint a member of the Assessment Committee for review and retotaling. If any error is noticed, the correction and amendment shall be made by the Dean, Assessment & Evaluation.

31.6.6 Attendance Policy

The 100% attendance is mandatory for fulfillment of credit requirements. A student must attend all scheduled lectures, practical, tutorials, class tests or any other form of teaching learning activities. In case, if a student is unable to attend the classes due to medical reasons, renewal of residence permit abroad, Hajj leave etc. a waiver of up to a maximum of 20% attendance will be considered by the attendance review committee, subject to the submission of medical certificate or any other supporting documents related to the absence from the class. In case the attendance is below 80% in any course, this will be treated as non-fulfillment of the credit hour requirement and F grade will be awarded automatically and the student shall be asked to register again for the course

31.6.7 Continuous Assessment

The students will be evaluated for their participation and performance in coursework, assignments, laboratory work, practical/skills assessments, class tests and mid semester examinations, which shall contribute to continuous assessments.

DEGREE AND PROGRAM COMPLETION POLICY

32. DEGREE AND PROGRAM COMPLETION POLICY

All students are expected to study the program and course details provided in the student handbook and university catalog. For any one degree all requirements under the terms of the catalog in effect at and after their admission must be met.

Candidates must satisfy all university and program requirements established by the faculty. The individual programs may have higher standards and/or more restrictive requirements as compared to the university minimum requirements.

The university mandates the following general degree completion requirements in order for students to receive their degrees. Each student must:

- Be continuously enrolled in the program from admission to graduation.
- Have satisfied all conditions of his or her admission.
- Successfully complete a comprehensive examination or equivalent as determined by the individual degree program.
- Submit a thesis or research project, if required by the academic program, to the University that meets the format requirements set forth in the College Thesis Manual.

The students shall fulfill the requirements of each course as prescribed and published and made available to the students. The student shall be responsible for attending all the classes and completing the requirements of the chosen program of study.

The Gulf Medical University confers degrees and issues statements of attestations on fulfilling all course completion requirements of the program for which the student is registered.

Only students who have successfully completed their degree requirements by the end of the program for which they applied to graduate are entitled for conferral of degrees. In witness of the degree conferred, a statement of graduation is entered in the permanent records of the graduates and their degrees are released. Such students can proceed to receive their degree certificates and participate in the convocation ceremony.

Specific Completion Requirements of each Program

Bachelor of Medicine & Bachelor of Surgery (MBBS)

- Complete the MBBS program with an overall score of 65% or higher.
- A minimum attendance of 80%.
- A student who fails in any of the PHASE I / II / III examination will not be allowed to progress to the next phase.

- On completion of the MBBS program and after passing the final qualifying examination the student will be eligible to commence the compulsory rotating resident internship (CRR I) program.

Bachelor of Physiotherapy (BPT)

- Complete the BPT program with an overall score of 60% or higher.
- A minimum attendance of 80%.
- Students must pass all the courses in the 1st & 2nd year before they are allowed to enter 3rd year.
- Students who appear for Final BPT Professional Examination should pass in all the courses before being considered eligible for internship.
- Students who do not submit their project on or before the specified time will not be eligible for graduation in that year.

Doctor of Pharmacy (Pharm D)

- Completion of 204 credits
- A minimum CGPA of 2.0
- A minimum pass mark of 70% (Grade C) for each course (from 2011 batch onwards)
- A minimum pass mark of 60% (Grade D) for progression only (2008 – 2010 batches)
- A minimum attendance of 80%

Doctor of Dental Medicine (DMD)

- Completion of 190 credits
- A minimum CGPA of 2.0
- A minimum pass mark of 70% (Grade C) for each course (from 2011 batch onwards)
- A minimum pass mark of 60% (Grade D) for progression only (2008 – 2010 batches)
- A minimum attendance of 80%

Bachelor of Biomedical Sciences (BBMS)

- Completion of 128 credits
- Obtaining a minimum GPA of 2.0
- Obtaining a minimum pass mark of 70% (Grade C) for each course
- Submitting and defending a project work up to the satisfaction of the project judging committee with a minimum pass mark of 70%
- Securing a minimum attendance of 80%

Bachelor of Health Sciences (BHS)

- Completion of 128 credits
- A minimum pass mark of 60% (Grade C) for each course
- A minimum CGPA of 2.0
- Submission of a research project
- Completion of the total credits of each respective Majors

ADMINISTRATORS & FACULTY

33.0 ADMINISTRATORS & FACULTY

Administrators

Mr. Thumbay Moideen	Founder President
Prof. Gita Ashok Raj	Provost
Prof. Mohammed Arifulla	Dean, Admissions & Registers
Prof. R. Chandramouli	Dean, Assessment & Evaluation
Dr. Joshua Ashok	Dean, Student Affairs
Prof. Manda Venkatramana	Dean, College of Medicine
Prof. Mohamed Said Hamed	Dean, College of Medicine
Prof. Arun Shirwaikar	Dean, College of Pharmacy
Dr. Praveen Kumar	Dean, College of Allied Health Sciences
Prof. Anoop Kumar Agarwal	Associate Dean, College of Graduate Studies

List of Faculty Members

Faculty of Biomedical Sciences

No.	Name	Qualifications	Conferring University	Designation
1	Prof. Gomathi Kadayam Guruswami	PhD – Biochemistry, 1993	All India Institute of Medical Science, India	Professor
2	Prof. Anoop Kumar Agarwal	PhD – Pharmacology, 1988	Postgraduate Institute of Medical Education and Research, Chandigarh, India	Professor
3	Dr. Mary Vincent Chirayath	PhD – Physiology, 1991	University of Madras, India	Professor
4	Dr. Sovan Bagchi	PhD – Physiology, 1998	Banaras Hindu University, India	Professor
5	Prof. Palat Krishna Menon	PhD – Medical Microbiology, 1998	Bangalore University, India	Adjunct Professor
6	Dr. Satheesha Nambiar Periya	PhD – Anatomy, 1998	University of Madras, India	Associate Professor
7	Dr. Nelofar Sami Khan	PhD – Biochemistry, 1998	Aligarh Muslim University, India	Associate Professor
8	Dr. Razia Khanam	PhD – Pharmacology, 2006	Hamdard University, India	Associate Professor
9	Dr. May Khalil Ismail	PhD – Biochemistry, 2006	University of Mosul, Iraq	Associate Professor

10	Dr. Pavana Pamu	PhD – Biochemistry, 2007	Annamalai University, India	Associate Professor
11	Dr. Rolan Mahassen	PhD – Pathology 2006	University of Damascus, Syria	Adjunct Associate Professor
12	Dr. Miral Nagy Fahmy Salama	MD – Anatomy, 2007	Ain Shams University, Egypt	Assistant Professor
13	Dr. Janita Rita Trinita Pinto	PhD – Microbiology, 2013	Vinayaka Mission University, India	Assistant Professor
14	Dr. Victor Raj Mohan Chandrasekaran	PhD – Toxicology, 2006	University of Madras, India	Assistant Professor
15	Dr. Rekha Kota	PhD – Pathology, 2006	University of Madras, India	Assistant Professor
16	Dr. Nazeerullah Rahamathullah	PhD – Microbiology, 2011	Bharathidasan University, India	Assistant Professor
17	Dr. Salma Naqvi	PhD – Pharmacology, 2013	University of Delhi, India	Assistant Professor
18	Dr. Ramya Rathan	PhD – Anatomy, 2015	JSS University, India	Assistant Professor
19	Dr. Eman Hassan Ibrahim Hassanein	MD – Pathology, 2011	Al Azhar University, Egypt	Assistant Professor
20	Dr. Lavanya Prathap	PhD – Anatomy, 2016	Saveetha University, India	Adjunct Assistant Professor
21	Dr. Darbar Vijaya Raju	PhD – Biotechnology, 2013	Acharya Nagarjuna University, India	Adjunct Assistant Professor
22	Dr. Lamis Mohamed Nader Saad Abdel Aal	MD – Forensic Medicine & Clinical Toxicology, 2014	Cairo University, Egypt	Adjunct Assistant Professor
23	Dr. Reena Balakrishnan	PhD – Bioinformatics, 2014	Mangalore University, India	Adjunct Assistant Professor
24	Dr. Amany Hamed Mahmoud Khedr	MD – Clinical Pathology, 2010	Cairo University, Egypt	Adjunct Clinical Lecturer

Faculty of Community Medicine

No.	Name	Qualifications	Conferring University	Designation
1	Prof. Shatha Saeed Hamed Al- Sharbatti	PhD – Community Medicine, 1998	Baghdad University, Iraq	Professor
2	Prof. Jayadevan Sreedharan	PhD – Epidemiology, 2014	University of Tampere, Finland	Professor

		PhD – Statistics, 2000	University of Kerala, India	
3	Dr. Ahmed Nabil Mohamed Abou-Taleb	MD – Public Health (Occupational Health & Industrial Medicine), 1987	Alexandria University, Egypt	Adjunct Professor
4	Dr. Anusha Sreejith	PhD – Statistical Science (Demography), 2012	University of Kerala, India	Lecturer

Faculty of Clinical Medical Sciences

No	Name	Qualifications	Conferring University	Designation
1	Dr. Mahmoud Elsayed Attia Shamseldeen	MD – Pediatrics, 1985	Al Azhar University, Egypt	Professor
2	Dr. Mahir Khalil Ibrahim Jallo	Arab Board for Medical Specialization in Internal Medicine, 1992	Arab Board for Medical Specialization, Syria	Adjunct Clinical Professor
3	Dr. Manda Venkatramana	FRCS – 2001	Royal College of Surgeons of Edinburgh, UK	Adjunct Clinical Professor
4	Dr. Imad Oudah Emnakher Al Sadoon	FRCP – 1995	Royal College of Physicians of Edinburgh, UK	Adjunct Clinical Professor
5	Dr. Mohammed Ahmed Refai Farag Sanad	MD – Orthopedic Surgery & Traumatology, 2011	Mansoura University, Egypt	Associate Professor
6	Dr. Hesham Moneer Ahmad Farghal	MD – Dermatology, 2003	Minia University, Egypt	Adjunct Clinical Associate Professor
7	Prof. Salwa Abdelzaher Mabrouk Ibrahim	MD – Internal Medicine, 1992	Ain Shams University, Egypt	Adjunct Clinical Associate Professor
8	Dr. Islam Lotfy Muhammad Muhammad El-Feky	Doctor Degree in Critical Care, 2013	University of Alexandria, Egypt	Assistant Professor
9	Dr. Ayman Abdelrazek Yakout Mohamed	MD – ENT, 2003	Al Azhar University, Egypt	Assistant Professor
10	Dr. Mohamed Kamal Mohamed Ali	MD – Orthopedics, 2001	Ain Shams University, Egypt	Adjunct Assistant Professor
11	Dr. Yassin Malallah Tahir Al- Musawi	FRCS – 1984	Royal College of Physicians and Surgeons of Glasgow, UK	Adjunct Clinical Assistant Professor

12	Dr. Sujaad Al Badran	FRCS – 1984	Royal College of Surgeons of Edinburgh, UK	Adjunct Clinical Assistant Professor
13	Dr. Ishwar Chandra Premsagar	M.Ch in Neurosurgery, 1987	University of Lucknow, India	Adjunct Clinical Assistant Professor
14	Dr. Mawahib Abd Salman Al Biate	Arab Board for Medical Specialization in Obstetrics & Gynecology, 1988	Arab Board for Medical Specialization, Syria	Adjunct Clinical Assistant Professor
15	Dr. Ahmed Mohamed Ibrahim Kamar	MD – General Surgery, 1995	Cairo University, Egypt	Adjunct Clinical Assistant Professor
16	Dr. Galaleldin Nagib Elkilany Abdellatif	MD – Cardiology & Angiology, 1998	Tanta University, Egypt	Adjunct Clinical Assistant Professor
17	Dr. Zareen Fasih	MRCP CH – 2001	Royal College of Pediatrics and Child Health, UK	Adjunct Clinical Assistant Professor
18	Dr. Abeer Saeed Ghobashi Alsayed	MD – Radiodiagnosis, 2001	Tanta University, Egypt	Adjunct Clinical Assistant Professor
19	Dr. Lalit Parida	M.Ch in Pediatric Surgery, 2006	All India Institute of Medical Sciences, India	Adjunct Clinical Assistant Professor
20	Dr. Mujeeb Mahammad Shaik	FRCS (Trauma & Orthopedic Surgery), 2008	Royal College of Surgeons of Edinburgh, UK	Adjunct Clinical Assistant Professor
21	Dr. Sameh Saied Ali Ali	MD – Radiodiagnosis, 2010	Ain Shams University, Egypt	Adjunct Clinical Assistant Professor
22	Dr. Kowshik Gupta	FRCP CH – 2011	Royal College of Pediatrics and Child Health, UK	Adjunct Clinical Assistant Professor
23	Dr. Moodibidri Srinivas Mallya	DM – Neurology, 2007	University of Mumbai, India	Adjunct Clinical Lecturer
24	Dr. Mohamed Hamdy Ibrahim Abdalla	MD – Neurology, 2008	Ai Shams University, Egypt	Adjunct Clinical Lecturer
25	Dr. Tamer Taha Ismail Taha	MD – Cardiology, 2010	Minia University, Egypt	Adjunct Clinical Lecturer
26	Dr. Sithara Kodappally Balagopal	DM – Gastroenterology, 2010	University of Calicut, India	Adjunct Clinical Lecturer
27	Dr. Ahmad Mohammed Riad Almansoury	MD – Chest Disease & Tuberculosis, 2011	Ain Shams University, Egypt	Adjunct Clinical Lecturer
28	Dr. Yasser Atwa Abdelsamad Atwa	MD – Ophthalmology, 2011	Benha University, Egypt	Adjunct Clinical Lecturer

29	Dr. Tamer Ali Ali Abouelgreed	MD – Urology, 2011	Al Azhar University, Egypt	Adjunct Clinical Lecturer
30	Dr. Laila Adel Mohammed Samy Mohsen	MD – Diagnostic Radiology, 2012	Minia University, Egypt	Adjunct Clinical Lecturer
31	Dr. Hossameldin Maged Abdelrahman Mohamed	MD – Pediatrics, 2012	Cairo University, Egypt	Adjunct Clinical Lecturer
32	Dr. Vinay Byrappa	DM – Neuroanaesthesia, 2014	National Institute of Mental Health & Neurosciences, India	Adjunct Clinical Tutor

Faculty of Dental Science

No	Name	Qualifications	Conferring University	Designation
1	Prof. Mohamed Mohamed Said Hamed	PhD - Oral & Maxillofacial Surgery, 1986	Tanta University, Egypt	Professor
2	Dr. Goran Tomic	PhD – Stomatological Sciences, 2001	University of NIS, Serbia	Professor
3	Dr. Iman Mohamed Tawfik Metwaly	PhD – Oral Pathology, 1990	Alexandria University, Egypt	Associate Professor
4	Dr. Sura Ali Ahmed Fuoad Al-Bayati	PhD - Oral Medicine, 2005	Baghdad University, Iraq	Associate Professor
5	Dr. Hossam Abdelatty Eid Abdelmagyd	Doctor Degree of Dental Sciences in Oral Medicine & Periodontology, 2007	Suez Canal University, Egypt	Associate Professor
6	Dr. Dusan Surdilovic	PhD – Preventive & Pediatric Dentistry, 2008	University of NIS, Serbia	Associate Professor
7	Dr. Marwa Alsayed Mohamed Masry Sharaan*	Doctor Degree in Dental Sciences Endodontics - 2009	Suez Canal University, Egypt	Associate Professor
8	Dr. Prabhu Manickam Natarajan	PhD – Periodontics, 2011	Bharath University, India	Assistant Professor
9	Dr. Ahmed Atef Aly Shon	PhD – Removable Prosthodontics, 2011	Al Azhar University, Egypt	Assistant Professor
10	Dr. Walid Shaaban Moustafa Elsayed	PhD – Oral Biology, 2011	University of Leeds, UK	Assistant Professor
11	Dr. Venkataramana Vannala	PhD – Orthodontics, 2013	Annamalai University, India	Assistant Professor
12	Dr. Shishir Ram Shetty	PhD - Oral Medicine & Oral Radiology - 2014	NITTE University, India	Assistant Professor

13	Dr. Hoda Gaafar Hassan Hammad	PhD – Dental Biomaterials, 2014	Cairo University, Egypt	Assistant Professor
14	Dr. Nesrine Aly Mokhtar Hassan El Sahn	PhD – Operative Dentistry, 2014	Cairo University, Egypt	Adjunct Assistant Professor

*- On Sabbatical Leave

Faculty of Pharmaceutical Sciences

No	Name	Qualifications	Conferring University	Designation
1	Prof. Arun Shirwaikar	PhD - Pharmaceutical Sciences, 1993	Mangalore University, India	Professor
2	Prof. Annie Shirwaikar	PhD - Pharmaceutical Sciences, 1996	Mangalore University, India	Professor
3	Dr. Kishore Gnana Sam Sundararaj	PhD - Clinical Pharmacy, 2009	Manipal University, India	Associate Professor
4	Dr. Rajendran Kuppusamy	PhD - Pharmacognosy & Phytochemistry, 2006	Manipal Academy of Higher Education, India	Associate Professor
5	Dr. Shery Jacob	PhD – Pharmaceutics, 2006	Manipal Academy of Higher Education, India	Associate Professor
6	Dr. Subish Palaian	PhD – Pharmacy Practice (Pharmacoepidemiology), 2010	Universiti Sains Malaysia, Malaysia	Associate Professor
7	Dr. Arunkumar Subramani	PhD – Medicinal Chemistry 2011	SRM University, India	Associate Professor
8	Dr. Sarat Chandran Chandra Shekar Shenoy	PhD - Pharmaceutical Sciences – 2012	Kannur University, India	Assistant Professor
9	Dr. Dixon Thomas	PhD – Pharmacy, 2013	Karpagam University, India	Assistant Professor
10	Dr. Suraj Radhamani	PhD – Pharmacy Practice 2014	La Trobe University, Australia	Assistant Professor
11	Dr. Jyothi Vanama	PhD - Pharmaceutical Sciences - 2014	Andhra University, India	Assistant Professor

Faculty of Allied Health Sciences

No	Name	Qualifications	Conferring University	Designation
1	Dr. Reetha Ismail	PhD – Nursing, 2005	University of Kerala, India	Professor
2	Dr. Vijaya Kumar Narne	PhD – Audiology 2010	University of Mysore, India	Associate Professor

3	Dr. Praveen Kumar Kandakurti	PhD – Sports Medicine & Physiotherapy, 2014	Guru Nanak Dev University, India	Assistant Professor
4	Dr. Kumaraguruparan Gopal	PhD – Physiotherapy, 2015	Ramakrishna Mission Vivekananda University, India	Assistant Professor
5	Dr. Ramprasad Muthukrishnan	PhD – Sports Medicine & Physiotherapy, 2011	Guru Nanak Dev University, India	Assistant Professor
6	Dr. Prathap Suganthirababu	PhD – Physiotherapy, 2012	Saveetha University, India	Assistant Professor
7	Dr. Jagatheesan Alageshan	PhD – Physiotherapy, 2013	Singhania University, India	Assistant Professor
8	Dr. Elizabeth Jean Abraham	PhD – Medical Surgical Nursing, 2014	Rajiv Gandhi University of Health Sciences, India	Assistant Professor
9	Dr. Muhammad Arsyad Subu	PhD – Nursing 2015	University of Ottawa, Canada	Assistant Professor
10	Dr. Wadah Mohamed Ali Khogali	PhD – Nuclear Medicine Technology, 2015	Sudan University of Science & Technology, Sudan	Assistant Professor
11	Dr. Abdelgadir Elamin Eltom Elamin	PhD – Medical Laboratory Science (Clinical Chemistry), 2015	Sudan University of Science & Technology, Sudan	Assistant Professor
12	Dr. Ahmed Luay Osman Hashim	PhD – Medical Laboratory Sciences, 2014	Sudan University of Science and Technology, Sudan	Assistant Professor
13	Dr. Anil Punamchand Bankar	PhD – Tourism Administration, 2014	Dr. Babasaheb Ambedkar Marathwada University, India	Assistant Professor
14	Dr. Jack Andrzej	PhD – Nuclear and Sub Nuclear Physics, 1993	Czech Technical University, Czech Republic	Adjunct Assistant Professor

Faculty of General Education

No	Name	Qualifications	Conferring University	Designation
1	Prof. Tatjana Ille	PhD – Medical Statistics and Informatics, 1999	University of Belgrade, Serbia	Professor
2	Dr. Ahmed Sebihi	PhD – Social Sciences and Psychology, 2010	Grant Town University, USA	Associate Professor
3	Dr. Dawa Alahdab	PhD – Sociology, 2007	Belford University, USA	Adjunct Associate Professor
4	Dr. Muzzama Abidi	PhD – Professional Psychology 2007	Bahria University, Pakistan	Adjunct Associate Professor

5	Dr. Amira Ibrahim Hassan Awad Gabir	PhD – Education, 2009	Ain Shams University, Egypt	Assistant Professor
6	Dr. Meena Varma Valavur Kovilakam	PhD – Physics, 1997	University of Kerala, India	Assistant Professor
7	Dr. Radhika Taroor	PhD – Psychology, 2011	Mother Teresa Women's University, India	Assistant Professor
8	Dr. Viswanath Reddy	PhD – Chemistry, 2014	The University of Hull, UK	Assistant Professor
9	Dr. Asma Fatima Syeda	PhD – Information Technology, 2015	Bundelkhand University, India	Assistant Professor
10	Dr. Manjunath Nimmakayalu	PhD – Zoology (Cytogenetics), 1994	Bangalore University, India	Adjunct Assistant Professor
11	Dr. Preetha Jayasheela Shetty	PhD – Genetics, 2011	Osmania University, India	Assistant Professor
12	Ms. Avula Kameswari	Master of Arts in Social Work, 1998	Nagarjuna University, India	Adjunct Lecturer



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P. O. Box: 4184, Ajman, United Arab Emirates • Tel.: +971 6 7431333 • Fax: +971 6 7431222
E-mail: gmcajman@emirates.net.ae • Website: www.gmu.ac.ae • www.gmchospital.com

