

**Kingdom of Saudi Arabia
Ministry of Education
Shaqra University
College of Applied Medical Sciences,
Dawadmi Campus**



Student's Handbook



2022

Last update: September 2022

TABLE OF CONTENTS

FOREWORD.....	3
A MESSAGE FROM THE DEAN	4
A BRIEF HISTORY OF THE COLLEGE.....	5
OUR VISION, MISSION, GOALS & CORE VALUES.....	6
<i>Mission</i>	6
<i>Vision</i>	6
<i>Goals</i>	6
<i>Core values</i>	6
STUDENT RIGHTS AND RESPONSIBILITIES	7
<i>Statement of Student Rights</i>	7
<i>Statement of Student Responsibilities</i>	7
THE NURSING PROGRAM.....	8
<i>Mission Statement</i>	9
<i>Program Goals</i>	9
THE CLINICAL LABORATORY SCIENCE PROGRAM	10
<i>Mission Statement</i>	11
<i>Program Goals</i>	11
COLLEGE FACILITIES.....	12
<i>The Laboratory Rooms for the different nursing subjects:</i>	16
<i>The Laboratory Rooms for the different Clinical Laboratory Science:</i>	22
STUDENT ACTIVITIES	24
<i>Sporting Activities</i>	24
<i>Recreational Activities</i>	25
A BRIEF INTRODUCTION TO THE INTERNSHIP PROGRAM	26
<i>Mission</i>	27
<i>Description</i>	27
<i>Philosophy of Internship Program</i>	27
<i>Goals</i>	27
<i>Objectives</i>	28
Study Plan of the Nursing Program	28
<i>Course Descriptions:</i>	30
STUDY PLAN OF THE CLINICAL LABORATORY SCIENCE PROGRAM	35
<i>Curriculum: Study Plan of the Nursing Program</i>	35
***After the completion of the eight (12) levels, one (1) year internship in an accredited hospital is required in partial fulfillment for the degree of Bachelor of Science in Clinical Laboratory Science.	
.....	36
<i>Course Descriptions:</i>	36
COLLEGE RULES AND REGULATIONS	43
<i>Article 1: General Regulations</i>	43
<i>Article 2: Academic Regulations</i>	43
<i>Article 3. Disciplinary Regulations:</i>	50
STUDENT’S HANDBOOK EDITORIAL BOARD	52

FOREWORD

This manuscript serves as a guide for the incoming and current students of the College of Applied Medical Sciences in Al-Dawadmi. All students are required to comply with the provisions of the Student's Handbook. They should be familiar with its contents. Ignorance of any provision on the Student's Handbook does not excuse any student from being sanctioned for non-compliance. The student's enrollment at Shaqra University is regarded as an expression of willingness to abide by all the rules and regulations prevailing at the College. Every student, therefore, is committed to the observance of these rules.

Welcome and let the University learning begins!



DR. NAHED ALQUWEZ
Dean of the College

A MESSAGE FROM THE DEAN

Praise be to Allah, Peace and Blessings be upon His Prophets & Messengers, our Prophet Muhammad and his family and companions.

I am so delighted to bless this Student's Handbook as my colleagues have made countless effort to make it a key to any inquiry about the college through identification of disciplines with plan of study for each department, and course descriptions of all courses offered in each academic level. This handbook also includes of information of the college and its regulations and executive rules currently implemented as approved by the Shaqra University Council.

To our beloved students, we care sincerely and offer our support wholeheartedly. Our door is continuously open to receive your concerns and to accept suggestions on ways to strengthen and build our learning community. This student handbook comprises valuable information to help navigate your journey through Shaqra University- Dawadmi Campus. Our aim is to promote your individual growth, assist engagement in our university, and inspire the development of essential life skills that will help you be successful well beyond your time on university grounds. Make use of it, become aware with your responsibilities as a student, and make the time to take advantage of the many opportunities to get involved. In that way, you will truthfully make the utmost of your life here in the university.

May Allah grant you success.

A BRIEF HISTORY OF THE COLLEGE



The College was established in the year 1413 H with the name, Dawadmi Health Institute under the General Directorate of Health Institutes and Colleges of the Ministry of Health (MOH). In 1428 H, the Institute was elevated to become a College of Health. During this period, Diploma courses like Nursing and Public Health were offered. On 22/12/1429 H, Royal Decree No. 11032 provided the transfer of jurisdiction of the health colleges from MOH to the Ministry of Higher Education (MOHE). As a result, the College became part of King Saud University (KSU). Under the care of KSU, the College began to grant the Bachelor of Science in Nursing (BSN) Degree.

Heralded as a milestone, Royal Decree No. 7305 dated 09/03/1430 H established Shaqra University through the kindness of the Custodian of the Two Holy Mosques King Abdullah. The colleges affiliated to Shaqra University include Community College, Arts and Science College and College of Applied Medical Sciences in Shaqra; Community College and College of Science and Humanities in Huraimala; College of Science and Humanities in Dharma. Other colleges affiliated to Shaqra University are: College of Education in Muzahamiya; College of Science and Humanities, Community College and College of Applied Medical Sciences in Quwayiyah; Community College, College of Science, College of Engineering, College of Pharmacology, College of Applied Medical Sciences and College of Education in Dawadmi; College of Arts and Science in Sajir; College of Education and College of Business Administration in Afif and College of Science and Humanities in Thadik wa Mahmal.

In the academic year 1430/1431 H, the former College of Health Sciences became the College of Applied Medical Sciences. The newly invigorated College began to offer other specialties like Bachelor of Science in Clinical Laboratory Science aside from Bachelor of Science in Nursing.

OUR VISION, MISSION, GOALS & CORE VALUES

Mission

Provision of quality, accredited college education producing competent professionals who meet the needs of the society in the fields of promotive, preventive, diagnostic, curative and rehabilitative medical sciences at par with the advancement of the delivery of health care services in the Kingdom.

Vision

To become a center of excellence in the achievement of scientific and academic leadership regionally and locally, raising the level of health services and advancing research in Al-Dawadmi and across the region.

Goals

1. To produce competent and highly efficient graduates in various applied medical specialties.
2. To apply the values and traditions of the Kingdom in the practice of the applied medical profession.
3. To meet the current and future needs of the Kingdom of qualified professionals in the field of health.
4. To study the needs of the labor market in the Kingdom and contribute to fill those needs.
5. To establish cooperation among health institutions in the province and Kingdom to share best practices.
6. To contribute in providing professional consultancy in the field of health education.
7. To provide health care services to all segments of the society in the field of diagnostic, therapeutic, clinical and preventive medicine.
8. To provide scientific skills and attitudes in health care delivery.
9. To use modern techniques in the field of applied medical sciences.

Core values

- **Justice:** We seek to achieve elements of justice and equality of opportunities and fairness in dealing with everyone.
- **Ethics:** We do work sincerely and we are committed to morality and professional ethics.
- **Transparency:** We are committed to disclose the transactions and procedures and strengthening accountability and integrity.
- **Quality:** We apply the highest standards of quality in all processes and services.
- **Creativity:** We create a college organizational climate conducive for creative thinking and innovative behavior.
- **Teamwork:** We embrace a culture of teamwork thinking and behavior.
- **Scientific Freedom:** We encourage scientific exploration practices in dealing with others.

STUDENT RIGHTS AND RESPONSIBILITIES

Statement of Student Rights

The university is a community of scholars in which the ideals of freedom of inquiry, freedom of thought, expression, and for the individual are sustained. It is committed to preserving the exercise of any right guaranteed to individuals by the laws of the Kingdom of Saudi Arabia. However, the exercise and preservation of these freedoms and rights require a respect for the rights of all in the community to enjoy them to the same extent. The following is vested upon the students at Shaqra University:

1. The student has the right to participate in his or her own education in an environment free from discrimination and harassment.
2. The student has the right to receive instruction from competent and qualified faculty and to engage in scholarly academic discourse with them.
3. The student has the right to be treated in a professional manner by faculty, staff, and other students.
4. The student has the right to reasonable privacy and accessibility on his or her academic records and other related documents.

Statement of Student Responsibilities

The opportunity to attend Shaqra University is a privilege which carries certain obligations. Presented below is the list of responsibilities that are expected from students to preserve the community and to pursue self- development.

1. Understanding and following the academic rules and regulations of the university
2. Conformity with the Code of Student Conduct and to respect the authority of Shaqra University officials.
3. Truthful in all his or her interactions at the university
4. Respect the rights of others in the campus community
5. Compliance with educational requirements by attending class, respecting academic requirements and deadlines, meeting financial obligations to the university, and completing assigned academic work in a satisfactory manner
6. Observance of dress code as prescribed by the university

THE NURSING PROGRAM



The Bachelor of Science in Nursing (BSN) Program was established in line with the aspirations of the Ministry of Higher Education to achieve its general goals in preparation and development of national human resources. Also, the program was instituted for the provision of qualified personnel and trained to meet the requirements of health care delivery system and the demands of the labor market. Lastly, it was designed to enrich scientific research and produce graduates to meet community issues and development needs.

Mission Statement

The department of Nursing aims to produce competent and effective nursing leaders and specialists of the profession as a general contribution to further uplift and continue the health care system in the Kingdom through a unique blend of quality education and scientific research. In order to meet this growing demand, special attention is focused on incorporation of evidence-based practice, scientific research, character-building and placement of graduates.

Program Goals

The nursing program is a four- year academic program followed by one- year internship program at the hospital during which the graduate consolidates their clinical skills and academic knowledge leading to the degree of Bachelor of Science in Nursing. In line with the philosophy and mission of the University of Shaqra, nursing graduates are expected to possess the following:

1. Skills and abilities in critical thinking and wise decision-making
2. Ability to apply the nursing process in the provision of nursing care , including psychological aspect , social, and spiritual needs of individuals, families and communities in different health-care settings
3. Ability to communicate effectively with patients, colleagues, and other members of the health team.
4. Leadership ability and management efficiency in the practice of nursing.
5. Research-utilization to improve the professional standards of nursing practice.
6. Self-learning ability and the effective and continuous development of the profession.
7. Efficiency in the delivery of health education for all individuals in different places to provide health care.
8. Responsibility and awareness of the legal and ethical issues related to the exercise of the profession of nursing, taking into consideration the cultural diversity in the community.

THE CLINICAL LABORATORY SCIENCE PROGRAM



The Clinical Laboratory Science (CLS) Program was established in line with the aspirations of the Ministry of Higher Education that the progress of any nation entirely depends on the extent it achieves in building and developing its human resources. Higher education represents one of the most important means of developing human resources, which in turn is considered a strategic investment for any country. Through higher education programs, every nation manages to fulfill its needs of knowledgeable and skilled labor forces, which labor markets needs and which its national development requires. One of the thrusts of the government is to enhance the national delivery of healthcare services among its citizens by competent healthcare professionals.

Consequently, the Clinical Laboratory Science Education aims to develop a foundation in the fundamentals of clinical laboratory science and to make it responsive to the demands for manpower in the paramedical service utilizing the highly innovative technologies.

Mission Statement

The Department of Clinical Laboratory Science empowers students for service in the field of laboratory medicine anywhere in the Kingdom through student-centered and competency-based education and training.

Program Goals

Bachelor of Science in Clinical Laboratory Science (BSCLS) is a five-year program that provides theoretical, practical and clinical learning experiences. The program prepares the student for work within the clinical laboratory. The fifth year is intended for the clinical internship program of one year in an accredited training laboratory with rotational duties in different sections such as Biochemistry, Hematology, Microbiology, Immuno-hematology (Blood Banking), Immunology and Serology, Urinalysis and other Body Fluids, Parasitology, Histopathologic/Cytologic techniques and other emergent technologies.

The Clinical Laboratory Science Education aims:

1. To inspire the students, acquire and develop relevant knowledge, skills, and attitudes in the field of Clinical Laboratory Science, which contribute to the holistic development of the learners, the community and the Kingdom as a whole.
2. To provide students with skills necessary for scientific research.
3. To train the students in terms of proficiency in instrumentation, laboratory diagnostic procedures and quality control.
4. To inculcate among the students the values of discipline, honesty, honor, integrity, service, dignity of labor and time management.

COLLEGE FACILITIES



The College Building

This building has a sustainable design, energy efficient design and performance, optimal lighting and acoustics, thermal comfort and appropriate humidity levels with reliable internet connection.



Faculty Rooms

Individual and spacious offices with personal computers and printers. It is tailored to the character and goals of the university, increases performance, allows employees to maximize their potential and enhances everyone's experience



Faculty Lounge

The lounge is set with furniture and equipment needed to provide comfort among faculty members during break time. It is where faculty members can gather and share insights regarding various educational issues.



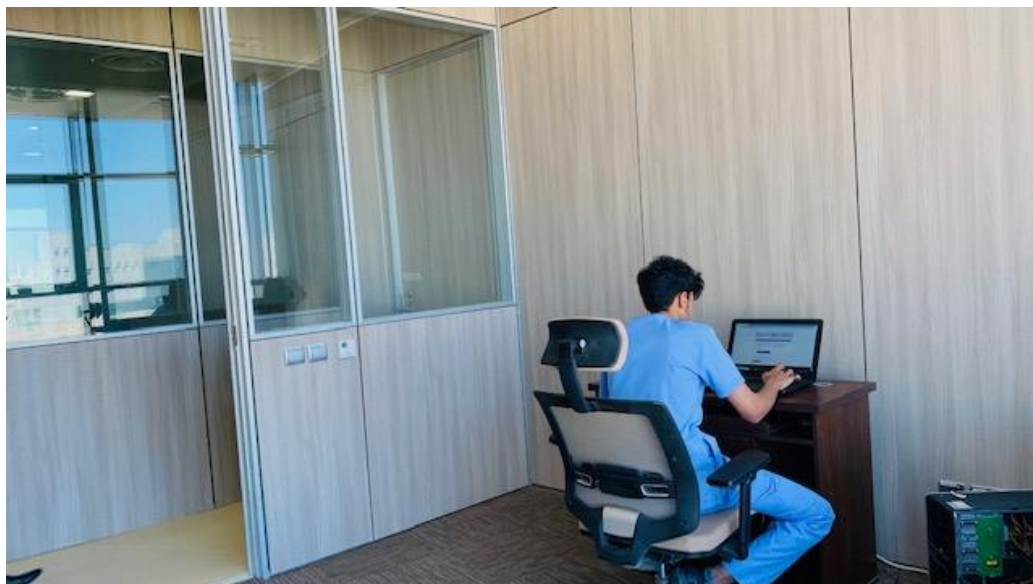
Lecture Rooms

Lecture rooms are equipped with teaching aids (i.e. LCD projectors, computers, television, smartboards) necessary for effective and efficient learning experience.



Examination Rooms

Examination rooms provide suitable space to accommodate a number of students for a specific examination. It is furnished with appropriate temperature, ventilation, and lighting and situated in an area where minimal noise is observed.



Computer Laboratory Room

Computer labs create inclusive, structured learning environments where students can learn and take online examinations.

The Laboratory Rooms for the different nursing subjects:

The laboratories are designed to enhance the nursing students' didactic learning of nursing intervention concepts with the valuable opportunity of practicing them on different types of clients.

The uniqueness of the Laboratories is that it combines the atmosphere of the hospital environment with sophisticated learning technology. These laboratories provide simulations of various health care settings using sophisticated learning technology. Laboratory activities are instrumental for ensuring the success of all our nursing students as they progress throughout their bachelor program.

The laboratories are intended to enhance the nursing students' didactic learning of nursing intervention concepts with the valuable opportunity of practicing them on different types of clients. These laboratories provide simulations of various health care settings using sophisticated learning technology. Lab activities are instrumental for ensuring the success of nursing students as they progress throughout their bachelor program.



Laboratory Lecture Room

Lecture rooms are equipped with LCD projectors for effective learning experience.



Anatomy Laboratory

The laboratory is equipped with human anatomy models for carrying out scientific experiments to understand the structures and functions of human bodies.



Fundamentals in Nursing Laboratory

The laboratory has updated and complete sets of equipment for the basic skills in nursing. Each laboratory has computers and a built-in LCD projector to allow for demonstration at the bedside to be projected onto the large screen (this can be deleted, sounds redundant) for movie-theatre type visibility.



Maternal and Newborn Laboratory

Students are trained in laboratory to provide them with sufficient experience in dealing with women during the different stages of pregnancy, child birth and during post-natal period. It is equipped with various models, dummies, bones, charts, instruments, equipment and mannequins of normal birth process and procedures.



Medical-Surgical Nursing Laboratory

This laboratory has operating room theater, intensive care unit and a general ward for simulation. The lab is design to prepare nursing students to acquire nursing skills and master the skills needed to provide high quality, safe nursing care and develop their self-confidence before moving to the real clinical settings.

Practical return demonstration in nursing is a teaching strategy to assess the nursing student's psychomotor skills and nursing care in a safe environment. It will improve their skills by giving them the chance to learn by practice.



A group of students simultaneously practicing certain skills in preparation for the graded practical return demonstration.



A nursing student manipulates a simulation model for preparation of naso-gastric tube feeding.



Students observe and practice the different roles and responsibilities of nurse in the Operating Room.



Students practicing certain skills with the simulator.



Students are prepared to perform emergency nursing procedures like CPR.

The Laboratory Rooms for the different Clinical Laboratory Science:





The College has three laboratories for the Clinical Laboratory Science Program namely the Microbiology Laboratory, Clinical Biochemistry Laboratory and Pathology Laboratory

Students in Medical laboratory science professionals are prepared to be vital healthcare detectives, uncovering and providing laboratory information from laboratory analyses that assist physicians in patient diagnosis and treatment, as well as in disease monitoring or prevention.

The students perform laboratory testing on blood and body fluids, and generate accurate laboratory data that are needed to aid in detecting cancer, heart attacks, diabetes, infectious mononucleosis, and identification of bacteria or viruses that cause infections, as well as in detecting drugs of abuse. In addition, students monitor testing quality and consult with other members of the healthcare team.





STUDENT ACTIVITIES

Sporting Activities

The College encourages students to join in sports and physical recreation activities and often provide a wide range of sports and recreation opportunities to cater for all levels of participant needs. The University of Shaqra explicitly encourages students to participate in physical recreational activities through the provision of a relaxed, non-intimidating environment and an attractive and relevant program.



The college believes that competitive sports like football to promote teamwork, which translates into selflessness, cooperation and better communication skills.

Recreational Activities



Table top football and billiards are set so they can play during their free time. These activities are beneficial for it improves critical thinking and cognitive skills. Students gain various skills, experience and confidence that are helpful for developing their personality.

A BRIEF INTRODUCTION TO THE INTERNSHIP PROGRAM

After finishing the four years academic preparation, Nurse Interns take place the internship program, which is an essential part of the Bachelor of Science in Nursing program of the university. The internship program provides proper training areas to achieve the objectives of the course. It covers 48 weeks of hospital-based internship period in a duly recognized hospital. It involves both clinical and theoretical experiences enabling the nurse intern to enact competencies in standards of care, professionalism, safe and legal practice and application of research.

Nurse interns are expected to join the hospital educational activities like seminars, training, workshops, lectures, in-service educational programs, health days, and projects. They are rotated in different areas which will serve as the training setting and to be able to practice clinical skills. The areas include Medical areas, Surgical areas, Pediatric areas, Obstetric, outpatients' clinics, Nursery, Delivery room, Psychiatric, Emergency room, ICU, NICU, PICU, Operating room, Nursing Management, Dialysis and Endoscopy). Also, nurse interns are requested to give their preference as to their elective area. Among the elective areas are Intensive care Units, Neonatal Intensive Care Units, Operating Room (OR) and Recovery Room, Delivery Room (DR), Emergency Room (ER), and Hemodialysis. A constant evaluation of every rotation will be given to each nurse intern according to college's performance evaluation criteria.

Mission

The College of Applied Medical Sciences Nursing Department Internship Committee is dedicated to promoting professional clinical nursing role of the nurse interns through quality nursing education and practice, leadership skills and research.

Description

It is a mandatory intensive clinical practice involving the utilization of nursing knowledge to actual nursing tasks in a medical setting along with the application of leadership and basic research skills.

Philosophy of Internship Program

As part of the curriculum of the Bachelor of Science in Nursing of the Shaqra University, the internship program adheres on the philosophy of the institution. Specifically, the program stands on the following viewpoints:

- Its focus should be on the promotion of high standard of safe and effective nursing practice thru the application of proper knowledge, skills and attitude in the actual work environment.
- A collaboration of nursing service, nursing education and nursing research is substantially required to successfully accomplish goal attainment.
- Integrity, excellence, respect and diversity are highly valued.

Goals

1. To facilitate the integration of appropriate knowledge, skills and attitude among new graduates in promoting competence in nursing practice of various setting
2. To effectively function on the entry level and/ or first supervisory level thru the application of basic skills in unit management in different areas

Objectives

Upon completion of internship program, a nurse intern is expected to:

1. Be able to apply learned theoretical knowledge into practice effectively and safely in various clinical settings;
2. Competently provide compassionate and holistic nursing care that is culturally sensitive;
3. Have improved and refined their effective, affective, and therapeutic communication skill and professional relationships with members of the multidisciplinary health care providers, clients, and their families;
4. Show enhancement on the ability to act independently and as a member of a team;
5. Have acquired adequate skill and competency qualifying her/ him as effective and efficient nurse specialist;
6. Perform basic management functions needed in provision of quality health care in a given unit;
7. Utilize advanced technology to promote improvement of quality care;
8. Educate clients and their significant others with regard to proper management of their health care needs;
9. Cooperate in activities i.e. seminars, training, conferences, related to health care industry;
10. Foster continuous growth as an individual, community member, and a professional health care provider.

For other information about the internship program including roles and responsibilities, duties, rights, policies and regulations, please refer to Nursing Internship Clinical Manual.

Study Plan of the Nursing Program

Level 1 (General)		
Code & No.	Course Title	Credit hrs
BIOL 101	Introduction to Biology	3(2+2)
CHS 101	Health & Fitness	2(2+0)
ENGL 109	English (1)	6(2+8)
Total		11

Level 2 (Health Track)		
Code & No.	Course Title	Credit hrs
CHEM 109	Introduction to Chemistry	3(2+2)
ENGL 110	English (2)	4(2+4)
MATH 130	Introduction to Mathematics	3(2+2)
Total		10

Level 3		
Code & No.	Course Title	Credit hrs
ACT 105	Academic and Life Skills	3(2+2)
PHYS 107	Introduction to Physics (1)	3(2+2)
ACT 130	Computer Skills	3(2+2)
ENGL 147	English for Medical Specialties	2(1+2)
Total		11
Level 5		
Code & No.	Course Title	Credit hrs
NUR 233	Fundamentals of Nursing - Theory	4(4+0)

Level 4		
Code & No.	Course Title	Credit hrs
Islamic 102	Islam & Building Society	2(2+0)
NUR 231	Principles of Anatomy	4(3+2)
NUR 232	Principles of Physiology	4(3+2)
NUR 235	Social Psychology	2(2+0)
Total		12
Level 6		
Code & No.	Course Title	Credit hrs
CHM 207	Biochemistry	2(2+0)

NUR 234	Fundamentals of Nursing - Practical	4(0+8)
NUR 241	Health Assessment	3(2+2)
Total		11

MED 241	Medical Microbiology	3(2+2)
NUR 242	Adult Health Nursing I - Theory	4(4+0)
NUR 243	Adult Health Nursing I - Clinical	3(0+6)
Total		12

Level 7		
Code & No.	Course Title	Credit hrs
NUR 351	Adult Nursing II - Theory	3(3+0)
NUR 352	Adult Nursing II - Clinical	3(0+6)
NUR 355	Principles of Nutrition	3(3+0)
NUR 356	Pharmacological Aspects of Patient Care	3(3+0)
Total		12

Level 8		
Code & No.	Course Title	Credit hrs
Arabic 103	Arabic Edition	2(2+0)
NUR 361	Maternal-Newborn Health Nursing - Theory	3(3+0)
NUR 362	Maternal-Newborn Health Nursing - Clinical	3(0+6)
NUR 365	Pathophysiology	3(3+0)
Total		11

Level 9		
Code & No.	Course Title	Credit hrs
Islamic 103	Economic System in Islam	2(2+0)
NUR 353	Human Growth and Development	2(2+0)
NUR 354	Health Education	2(2+0)
NUR 363	Pediatric Health Nursing - Theory	3(3+0)
NUR 364	Pediatric Health Nursing - Clinical	3(0+6)
Total		12

Level 10		
Code & No.	Course Title	Credit hrs
Islamic 104	Political System in Islam	2(2+0)
NUR 471	Community Health Nursing - Theory	3(3+0)
NUR 472	Community Health Nursing - Clinical	3(0+6)
NUR 485	Trends and Issues in Nursing	2(2+0)
NUR 486	Evidence-based Practice and Critical Thinking	2(2+0)
Total		12

Level 11		
Code & No.	Course Title	Credit hrs
NUR 473	Mental Health Nursing - Theory	3(3+0)
NUR 474	Mental Health Nursing - Clinical	3(0+6)
NUR 475	Nursing Research and Statistical Analysis	3(3+0)
NUR 484	Information Technology in Nursing	3(3+0)
Total		12

Level 12		
Code & No.	Course Title	Credit hrs
NUR 481	Emergency Nursing	5(2+6)
NUR 482	Nursing Management and Leadership - Theory	3(3+0)
NUR 483	Nursing Management and Leadership - Clinical	2(0+4)
Total		10

***After the completion of the eight (12) levels, one (1) year internship in an accredited hospital is required in partial fulfillment for the degree of Bachelor of Science in Nursing.

Course Descriptions:

CHM 207: Biochemistry, 2(2+0+0)

Pre-requisites: BIO 101, CHM 109

The goal of this course is to acquire basic knowledge about structure and functions of proteins, amino acids, lipids, carbohydrates, minerals and vitamins. Also, the course focuses on structure and functions of hormones, enzymes and related clinical conditions, as well as principles of metabolism.

NUR 235: Social Psychology, 2(0+2+0)

This course aims to study social and psychological factors, which affects the human behavior and conditions which lead to disturbances in social and psychological status. Through this course, students will learn about theories of social psychology, attitude, thinking and emotions.

MED 241: Medical Microbiology, 3(2+1+0)

Pre-requisite: BIO 101

The course is designed to provide nursing students with essential information in medical microbiology science, including general knowledge about bacteria, viruses, protozoa, fungi and parasites with their effects on human health and methods of prophylaxis and treatment against them.

NUR 231: Principles of Anatomy, 4(3+1+0)

Pre-requisite: BIO 101

This course introduces human anatomy in an easy way. Topics include; the musculoskeletal system, the cardiovascular system, the integumentary system, the urinary system, the respiratory system, the digestive system, the endocrine system, the reproductive system, and the nervous system. The theoretical part will be enhanced through practice in lab.

NUR 232: Principles of Physiology, 4(3+1+0)

Pre-requisite: BIO 101

This course is concerned with the study of function of different body systems and its clinical applications in nursing, it includes the study of blood, circulation, respiration, regulation of water and electrolyte balance, digestion and absorption of food, urinary, endocrine, musculoskeletal and nervous system. It also includes the study of different diseases that disturb normal functions of human body. The theoretical part will be enhanced through practice in lab.

NUR 233: Fundamentals of Nursing / Theory, 4(4+0+0)

Co-requisites: NUR 231, NUR 232

This theoretical course is designed to provide nursing students with the knowledge and information that will combine between the past and recent history of nursing. The course focuses on the history of nursing in the world as well as the Arab countries and the Kingdom. Specific emphasis is placed on the stages of the development throughout the history of nursing profession. The influence on each of stage of development is emphasized. Throughout the course, students will be introduced to variety of concepts and nursing theories. Specific emphasis will be placed on the nursing process and its applications in nursing practice. The principle of the basic nursing skills, hygiene, nutrition, mobility, safety and medication calculations and administration will be addressed.

NUR 234: Fundamentals of Nursing / Practical, 4(0+4+0)

Co-requisite: NUR 233

This course is a co-requisite to the theoretical part of fundamentals of nursing. It focuses on exploring the nursing process and its application in nursing practice. Students apply the

concepts of communication, hygiene, nutrition, mobility, safety, and medication calculation and administration in the lab prior to their contact with the patients in hospitals.

NUR 241: Health Assessment, 3(2+1+0)

Pre-requisites: NUR 233, NUR 234

This course is divided into 2 parts; the theoretical part is designed to provide nursing students with the knowledge and skills needed to assess the physical and mental health status of clients with different age groups. Specific attention is given to the bio-psychosocial and spiritual dimension of the clients. Normal and abnormal variations are also addressed. The practical part of this course aims at providing nursing students with the opportunity to use interview, observation, percussion, palpation, inspection, and auscultation in assessing clients in the lab and later in health care settings.

NUR 242: Adult Health Nursing I / Theory, 4(4+0+0)

Pre-requisites: NUR 232, NUR 233; Co-requisite: NUR 243

This theoretical course introduces nursing students to the role of professional nurse in the promotion of care among adult clients. It focuses on providing nursing Care for adult client experiencing specific health alterations. Students are also provided with the relevant Knowledge to the aging process and how to examine the main concepts and needs that are related. The nursing process; critical thinking concepts and the cultural variations between patients are also addressed.

NUR 243: Adult Health Nursing 1/ Clinical, 3(0+3+0);

Pre-requisite: NUR 234; Co-requisites: NUR 241, NUR 242

This clinical course is a co-requisite to the theoretical part of adult health nursing 1. The course focuses on improving the knowledge and skills of nursing students to enable them in providing competent nursing care for adult with actual and potential health problems. The course also emphasizes the importance of applying the nursing process to care for clients with acute and chronic conditions within the medical and surgical settings. The cultural, ethical, and legal considerations are addressed.

NUR 351: Adult Health Nursing 2 / Theory, 3(3+0+0)

Pre-requisite: NUR 243; Co-requisite: NUR 352

This theoretical course is designed to provide nursing students with more advanced knowledge that enables them to care for their adult clients competently. The course also focuses on the use of the nursing process and critical thinking principles to guide them in providing nursing care to clients complaining of acute, chronic and critical conditions. Socio-cultural variations between clients and the relevant ethical considerations are also addressed.

NUR 352: Adult Health Nursing 2 / Clinical, 3(0+3+0)

Pre-requisite: NUR 244; Co-requisite: NUR 351

This clinical course is a co-requisite to the theoretical part of adult health nursing-2. The course focuses on improving students' skills in utilizing the nursing process and critical thinking principles that enables students to provide the best nursing care for their clients. During the course, student will be exposed to a variety of experiences in the medical, surgical, cardiology, neurology, orthopedic, oncology, dialysis, ear and throat units, as well as operation room.

NUR 353: Human Growth and Development, 2(2+0+0)

Pre-requisites: NUR 232, NUR 351

This course is designed to introduce nursing student to the concepts of growth, development, and maturation. It explores the stages of growth and development throughout the life span. Specific emphasis is placed on the physical, emotional, cognitive, social, and spiritual growth and development of human beings. Nursing precaution measures in each developmental stage are also addressed.

NUR 354: Health Education, 2(2+0+0)

This course aims to provide nursing students with knowledge about learning theories and teaching strategies as well as understanding the basis of designing and developing educational programs according to necessary information about health needs of individual, family and community. Health education program planning, selection of target groups, implementation, and evaluation is also covered. Students learn how to work as member of health team to lead the local community and the proper use of all methods in health education.

NUR 355: Principles of Nutrition, 2(2+0+0)

Pre-requisites: CHM 207, NUR 241; **Co-requisite:** NUR 351

This course introduces nursing student to the concepts of nutrition in illness and wellness. Student will be able to learn about the nutritional requirements of humans of different age groups. Attention is given to the nutrition and metabolism, nutrition and illness, influences of culture on nutrition, and the role of professional nurses in assessing and providing proper nutritional needs of all clients.

CLS 356: Pharmacological Aspects of Patient Care, 3(3+0+0)

Pre-requisite: CHM 207; **Co-requisites:** NUR 243, NUR 244

This course is designed to introduce nursing students to the major categories of drugs. The principles of action, therapeutic use of drugs, and the side effects are emphasized. Specific attention is given to the nursing considerations for medication administration, adverse effects and drug interaction.

NUR 361: Maternal-Newborn Health Nursing / Theory, 3(3+0+0)

Pre-requisite: NUR 351; **Co-requisite:** NUR 362

This theoretical course introduces nursing students to the role of professional nurse in the delivery of nursing care to childbearing families in the hospital or in the community. Emphasis is placed on the pregnancy, labor, and neonatal stages. High risk and complications of pregnancy and delivery are addressed. Ethical and legal dilemmas, the cultural influences and variations related to pregnancy and labor are also emphasized.

NUR 362: Maternal-Newborn Health Nursing / Clinical, 3(0+3+0)

Pre-requisite: NUR 352; **Co-requisite:** NUR 361

This clinical course is co-requisite to the theoretical part of maternal-newborn health nursing. Emphasis is placed on applying the nursing process and critical thinking skills are prime frameworks prior to, during and following the delivery, the concept of holistic care to the childbearing families is also emphasized. Specific attention is given to exposing student to a variety of situations during lab/clinical experiences to enable student in helping childbearing families to adapt.

NUR 363: Pediatric Health Nursing / Theory, 3(3+0+0)

Pre-requisite: NUR 351; **Co-requisite:** NUR 364

This theoretical course aims at exploring the role of nurses in promoting the health status of children. The course also introduces nursing students to the most common acute and chronic

health alterations among children including the communicable diseases. Concepts of normal growth and development of neonates and children and vaccination are addressed.

NUR 364: Pediatric Health Nursing / Clinical, 3(0+3+0)

Pre-requisite: NUR 352; **Co-requisite:** NUR 363

This clinical course is a co-requisite to the theoretical part of pediatric health nursing. It focuses on the health and illness of infants and children. Emphasis is placed on the therapeutic nursing interventions for the acute, chronic, actual and potential health alteration in children in the context of holistic approach of care, through exposing students to a variety of situations during lab/clinical experiences. The legal, ethical, cultural, economic, and social factors, which affect decision making and outcomes of nursing care explored.

NUR 365: Patho-physiology, 3(3+0+0)

Pre-requisites: NUR 232, NUR 241; **Co-requisite:** NUR 351

This theoretical course introduces nursing student to the mechanisms and theories related to the development of disease and alteration in body function of individuals throughout their life span. Common conditions related to functional health patterns and immunological responses are also addressed.

NUR 471: Community Health Nursing / Theory, 3(3+0+0)

Pre-requisites: NUR 361, NUR 363; **Co-requisite:** NUR 472

This theoretical course focuses on exploring the main role of community health nursing in promoting health, preventing illness, and restoring health. The nursing process as a prime framework in providing nursing care of individuals and families will be explored and applied. Emphasis is placed on the assessment of physical, psychosocial, and cultural environments. Knowledge related to identifying individuals and communities at risk and providing them with the proper nursing care is also explored.

NUR 472: Community Health Nursing / Clinical, 3(0+3+0)

Pre-requisites: NUR 362, NUR 364; **Co-requisite:** NUR 471

This clinical course is a co-requisite to community health nursing theoretical part. It aims at developing the skills of nursing students in providing nursing care for individuals, families, and communities. The course also focuses on providing students with the opportunity to put theory into practice in a variety of selected placements in the community. The primary health care centers, schools, and factories are all examples of these setting.

NUR 473: Mental Health Nursing / Theory, 3(3+0+0)

Pre-requisites: NUR 361, NUR 363; **Co-requisite:** NUR 474

This theoretical course introduces nursing student to the basic concepts of mental health and illness. It provides student with a base knowledge of mental health disorders, role of mental health nurses, theories of personality development, and treatment modalities. An emphasis is placed on the nursing process to provide proper nursing care for mentally ill. Communication skills and therapeutic relationship with mentally ill people is also addressed.

NUR 474: Mental Health Nursing / Clinical, 3(0+3+0)

Pre-requisites: NUR 363, NUR 364; **Co-requisite:** NUR 473

This clinical course is a co-requisite to theoretical part of mental health nursing module. Guided by the nursing process, critical thinking and therapeutic communication skills, the nursing students are provided with the opportunity to apply the learnt theoretical concepts into

practice. Emphasis is placed on promoting, maintaining, and restoring the mental health of individuals and families. Interdisciplinary team planning, intervention, and therapeutic group meeting are also considered.

NUR 475: Nursing Research and Statistical Analysis, 3(3+0+0)

This course is designed to assist the student to develop an understanding of the basic principles of research and scientific inquiry including the identification of problem and steps in research methodology in the field of nursing. Also, it introduces the basic concepts, and principles of statistical methods, methods of data collection, sampling, how to choose them & provides nursing students with competencies necessary to read, evaluate, and interpret findings of nursing research studies, in addition to the use of computers in conducting research project in groups and use of the findings in nursing practice.

NUR 481: Emergency Nursing, 5(2+3+0)

This course focuses on providing student with the necessary nursing skills to provide care for emergencies and common accidents, the application of skills will take place in emergency settings. The theoretical part of course addresses studying the fundamentals of emergency care and methods of evaluation and classification of clients according to degree of risk, including the foundations of CPR and its applications, Wound care and burns of all types and degrees, poisonings, fractures, coma and the change in temperature and methods of treatment, with emphasis on the role of nursing care in emergency situations.

NUR 482: Nursing Management and Leadership / Theory, 3(3+0+0)

Pre-requisites: NUR 471, NUR 473; **Co-requisite:** NUR 483

This theoretical course focuses on the basic concepts of leadership and management. It also emphasizes the role of the nurses as changing agent in forming health care for the future. The concepts and theories of organization, management and leadership, change, decision making are explored. Socio-cultural, economical, and historical factors that influence health care system are all also emphasized.

NUR 483: Nursing Management and Leadership / Clinical, 2(0+2+0)

Co-requisite: NUR 482

This clinical course is a co-requisite to the theoretical part of nursing management and leadership. The course focuses on the application of theoretical concepts in the practice setting where students are expected to gain managerial and leadership experience. Emphasis is placed on resource management, conflict resolution, managed care, quality improvement, and evaluation practice through collaborative efforts between hospital staff and college mentors.

NUR 484: Information Technology in Nursing, 3(3+0+0)

Pre-requisite: NUR 475; **Co-requisite:** NUR 483

This course focuses in the importance of utilization of computer in health care, education, research, practice, and administration with specific emphasis on nursing applications. The course place emphasis on the clinical information system, the internet, word processing, and data bases.

NUR 285: Trends and Issues in Nursing, 2(2+0+0)

This course is designed to discuss the legal and ethical issues related to nursing practice. The local and global issues that influence nursing practice are addressed. Emphasis is placed on the laws, regulations, legal systems and standards of care. Specific attention is given to the differences between ethical and legal bases for nursing actions on the local and global levels to facilitate decision making process.

NUR 486: Evidence-Based Practice and Critical Thinking, 3(3+0+0)

Pre-requisite: NUR 475

This theoretical course focuses on providing nursing student with the cognitive critical thinking skills required for professional nursing practice. The course enables nursing students to practice critical thinking through the analysis of certain nursing case studies. Specific emphasis is placed on a variety of nursing specialties including adult health nursing, community nursing, maternal-newborn nursing, child health nursing and mental health nursing.

STUDY PLAN OF THE CLINICAL LABORATORY SCIENCE PROGRAM

Curriculum: Study Plan of the Nursing Program

Level 1 (General)		
Code & No.	Course Title	Credit hrs
BIOL 101	Introduction to Biology	3(2+2)
CHS 101	Health & Fitness	2(2+0)
ENGL 109	English (1)	6(2+8)
Total		11

Level 2 (Health Track)		
Code & No.	Course Title	Credit hrs
CHEM 109	Introduction to Chemistry	3(2+2)
ENGL 110	English (2)	4(2+4)
MATH 130	Introduction to Mathematics	3(2+2)
Total		10

Level 3		
Code & No.	Course Title	Credit hrs
ACT 105	Academic and Life Skills	3(2+2)
PHYS 107	Introduction to Physics (1)	3(2+2)
ACT 130	Computer Skills	3(2+2)
ENGL 147	English for Medical Specialties	2(1+2)
Total		11

Level 4		
Code & No.	Course Title	Credit hrs
Islamic 102	Islam & Building Society	2+0=2
HLT 231	Professionalism & Health Care System	2+0=2
CLS 231	Human Anatomy and Physiology	3+1=4
CLS 232	Clinical Biochemistry I	3+1=4
Total		12

Level 5		
Code & No.	Course Title	Credit hrs
Arabic 103	Arabic Edition	2+0=2
CLS 233	Clinical Analytical Chemistry	2+1=3
CLS 241	Basic Microbiology	2+2=4
CLS 243	Descriptive Histology	2+1=3

Level 6		
Code & No.	Course Title	Credit hrs
HLT 232	Basics of Emergency Care	3+0=3
CLS 242	Clinical Biochemistry II	3+1=4
CLS 244	Clinical Instrumental Analysis	3+1=4

Total	12
--------------	-----------

Total	11
--------------	-----------

Level 7		
Code & No.	Course Title	Credit hrs
Islamic 103	Economic System in Islam	2(2+0)
CLS 352	Hematology	2+2=4
CLS 354	Clinical Mycology	2+1=3
CLS 355	Histological Techniques	1+1=2
Total		11

Level 8		
Code & No.	Course Title	Credit hrs
STAT 106	Biostatistics	2+0=2
CLS 351	General Pathology	2+1=3
CLS 353	Clinical Biochemistry III	3+1=4
CLS 361	Clinical Bacteriology I	2+1=3
Total		12

Level 9		
Code & No.	Course Title	Credit hrs
HLT 261	Epidemiology	2+1=3
CLS 362	Medical Parasitology	3+1=4
CLS 363	Immunology	3+1=4
Total		11

Level 10		
Code & No.	Course Title	Credit hrs
Islamic 104	Political System in Islam	2(2+0)
CLS 471	Clinical Bacteriology II	2+1=3
CLS 473	Immunohaematology	2+2=4
CLS 476	Clinical Practice Biochemistry	1+1=2
Total		12

Level 11		
Code & No.	Course Title	Credit hrs
CLS 472	Virology	2+0=2
CLS 474	Cytopathology	1+1=2
CLS 475	Clinical Enzymology	1+1=2
CLS 481	Environmental Microbiology	1+1=2
CLS 483	Medical Genetics	2+1=3
Total		11

Level 12		
Code & No.	Course Title	Credit hrs
HLT 281	Computer Applications for Health Sciences	2+0=2
CLS 482	Clinical Practice Microbiology	1+2=3
CLS 484	Clinical Practice Hematology	1+1=2
CLS 485	Laboratory Management	2+0=2
CLS 486	Departmental Seminar	2+0=2
Total		11

*****After the completion of the eight (12) levels, one (1) year internship in an accredited hospital is required in partial fulfillment for the degree of Bachelor of Science in Clinical Laboratory Science.**

Course Descriptions:

HLT 231: Professionalism and Health Care Systems, 2(2+0)

As introductory course for health professions, this course covers many topics that include definition of health, discussion of factors affecting health, & health care delivery systems in

the kingdom. It's also focused on types of health professions and ethics, as well as ways of succeeding during study and after graduation.

HLT 232: Basics of Emergency Care, 3(2+1)

This course covers the theoretical and practical skills necessary of emergency care and first aid. The course also introduces students to principles of assessment and basic care measures for accidents and common emergencies as well as CPR. The practical part applied in the nursing labs and training settings by using demonstration, re-demonstration and simulation.

STAT 106: Biostatistics, 2(2+0)

This course covers the basic principles of biostatistics that include data collection, organizing, analysis and representing. It's focused on descriptive statistics like measures of central tendency, dispersion measures, formulating and testing hypothesis and conducting pilot studies.

CLS 231: Human Anatomy and Physiology, 4(3+1)

Pre-requisite: BIO 106

The Introduction to Anatomy and Physiology course will study the shape, structure, and function of the human body and its parts. Content includes: basic anatomy and directional terminology, structure and function of various organ systems of the body and special sense organs, fundamental concepts and principles of body organization, histology, and hematology.

CLS 232: Clinical Biochemistry 1, 4(3+1)

Pre-requisites: CHEM 105, CHEM 106

This course covers the structures and functions of biomolecules, which include carbohydrates, proteins, lipids, nucleic acids, enzymes and hormones. In the practical part of this course, students study the detection and determination of some of these biomolecules in the urine and other body fluids.

CLS 233: Clinical Analytical Chemistry, 3(2+1)

Pre-requisites: CHEM 105, CHEM 106

The course provides a review of fundamental concepts of volumetric analysis as applied to biological fluids. The theoretical and practical aspects of different types of titrimetric analysis including acid-base, complexometric and precipitation titrations are studied.

CLS 241: Basic Microbiology, 4(2+2)

Pre-requisite: CLS 231

This course provides the fundamental concepts and general characteristic features of different kinds of microorganisms. Basic concepts and techniques of the cultivation of bacteria and fungi with the preparation of various types of culture media are covered. Practical portion of the course involves the basic staining techniques and microscopy for morphological identification of the medically-significant bacteria and fungi.

CLS 242: Clinical Biochemistry II, 4(3+1)

Pre-requisite: CLS 233

Course work involves a study of the metabolic activity of animal tissue and its regulation. Major catabolic pathways related to carbohydrates, amino acids, and fatty acids are discussed in detail. The study includes a look at the bio-energetic of cells.

CLS 243: Descriptive Histology

Pre-requisite: CLS 231

This course will provide the student with the basic knowledge of the theoretical and applied aspects of cells and tissues which form the organs of human body. This course will also cover the four basic tissues, their function, and the gross as well as the microscopic appearance of organs of the human body such as nervous system, circulatory system, lymphatic system, respiratory system, digestive system, urinary system and reproductive systems.

CLS 244: Clinical Instrumental Analysis, 4(3+1)

The knowledge of the principles of instrumentation is essential for a clinical laboratory technologist, which can be utilized in a modern laboratory set-up. A good understanding of the operation and principles of various instruments such as different types of microscopes including electron microscope; autoclave, hot air oven, laminar air flow, centrifuge, incubator and other laboratory equipment and apparatus.

CLS 351: General Pathology, 3(2+1)

Pre-requisite: CLS 243

This course includes an introduction to pathological terminology, etiology, manifestation and diagnosis. The course will also include the response of the cell towards various stimuli in the form of inflammation, tumor and immunological reaction. The other part of this course will cover an application of these facts on different body systems and organs. This will give the students the knowledge of different disease processes involving different system.

CLS 352: Hematology, 4(2+2)

Pre-requisite: CLS 231

Students will study the normal hemopoiesis, nutritional factors in hemopoiesis and classification and causes of anemia and their laboratory findings. They will be taught the structure, synthesis and functions of normal hemoglobin, as well as the abnormal hemoglobin and their laboratory findings. Normal and abnormal leucopoiesis will be taught and mention will be made of the classification and laboratory findings of acute and chronic leukemia. The process of homeostasis will be underscored along with the laboratory test of haemostatic failure.

CLS 353: Clinical Biochemistry III, 4(3+1)

Pre-requisite: CLS 242

This course will prepare the students in understanding the principles of laboratory tests performed in routine and special chemistry laboratory. A comprehensive grasp of the concepts will be developed along with required component of physiological chemistry, biochemical principles of the tests performed, clinical significance and interpretation of the data against the normal values on the test performed in a manual/automated setting.

CLS 354: Clinical Mycology, 3(2+1)

Pre-requisite: CLS 241

The course deals with the theoretical and practical aspects of structure and physiology of various fungi and yeasts, their cultural characteristics, diseases and clinical presentation, pathogenesis, modes of transmission, laboratory diagnosis, prevention and control.

CLS 355: Histological Techniques, 2(1+1)**Pre-requisite: CLS 243**

This course will provide the student with the basic theoretical knowledge and practical experience in the methods and techniques in dealing with the surgical biopsies. This course will enable the student to perform the common techniques in tissue processing and produce stained sections by using the correct instruments. Instructions on the maintenance of such instrument will be given.

CLS 361: Clinical Bacteriology I, 3(2+1)**Pre-requisite: CLS 241**

The first part of this course deals with the theoretical and practical aspects of chemotherapeutic agents, their modes of action, methods of evaluation and susceptibility testing, and mechanism of microbial resistance. The second part deals with brief description of host-parasite relationships, followed by detailed study of structure and physiology of Gram(+) & (-) cocci, aerobic spore and non-spore forming bacilli and the Mycobacterium, their cultures, diseases and clinical presentation, pathogenesis, modes of transmission, laboratory diagnosis, prevention and control.

CLS 362: Medical Parasitology, 4(3+1)**Pre-requisite: CLS 241**

Some of the most important agents of morbidity and mortality in developing countries are parasites. This course is designed to prepare students for a career in the diagnosis and control of human parasitic infections. The mode of instrumentation will be lectures, laboratory practical and internship. Lectures on the classification, morphological characteristics, life cycles of all the protozoa and helminthes of medical importance. Mechanism of their disease production, epidemiology and prevention are emphasized as well as the detailed teaching of various laboratory techniques in the examination of biological specimens for the detection and identification of parasites.

CLS 363: Immunology, 4(3+1)**Pre-requisite: CLS 353**

This course is designed to give a basic understanding of the theoretical and practical aspects of immunology, including immune responses, immune regulation and immuno-pathology. By the completion of the course, the students will be able to perform and interpret various immunological assays used in clinical immunology laboratory and will be familiar with cell separation technique, in vitro assays for evaluation of CMI and tissue typing.

HLT 261: Epidemiology, 3(2+1)

This course introduces the basic concepts of epidemiology and biostatistics as applied to public health problems. Emphasis is placed on the principles and methods of epidemiologic investigation, appropriate summaries and displays of data, and the use of classical statistical approaches to describe the health of populations.

CLS 471: Clinical Bacteriology II, 3(2+1)**Pre-requisite: CLS 361**

This course deals with the study of structure and physiology of Gram-negative bacteria to include tribes of Enterobacteriaceae, Pseudomonads, Vibrios, Campylobacter, Helicobacter, Bordetella, Brucella, Haemophilus, Legionella and related organisms, Spirochetes, Mycoplasma, Chlamydia, spore and non-spore forming anaerobes, their cultures, diseases and clinical presentation, pathogenesis, modes of transmission, laboratory diagnosis, susceptibility testing, prevention and controls.

CLS 472: Virology, 2(2+0)

Pre-requisite: CLS 241

This course deals with the structure and physiology of various groups of medically important viruses, their propagation, diseases and clinical presentation, pathogenesis, modes of transmission, laboratory diagnosis, prevention and controls.

CLS 473: Immunohaematology, 4(2+2)

Pre-requisites: CLS 352, CLS 363

Students will study the important blood groups systems, their antigens and their corresponding antibodies. They will be taught the techniques of blood groupings and blood cross-matching. Causes of cross-match incompatibility will be taught. Blood collection, blood preservation and blood products preparation and needs for transfusion of blood products will be emphasized. Various abnormal reactions to blood transfusion including transmissible diseases (Hepatitis, HIV, etc.) will be covered. Causes and investigations of Hemolytic transfusion reactions and immune Hemolytic anemia will be underscored.

CLS 474: Cytopathology, 2(1+1)

Pre-requisite: CLS 243

This course will provide the student with the basic knowledge of the theory and practical aspect in the diagnosis of tumor cells and non-malignant conditions. This can be achieved by microscopic examination of smears prepared from exfoliated cells or fine-needle aspirated material. The course will enable the student to identify through the microscope the normal and malignant cells by which malignant tumors can be diagnosed. The students will also be trained to perform the different technical methods applied in cytology preparation and self precautions from contacting infections.

CLS 475: Clinical Enzymology, 2(1+1)

Pre-requisite: CLS 353

This course deals with the study of theoretical and practical aspects of chemical structures and actions of various enzymes, their assay methods, and clinical applications in the diagnosis of diseases related to disorders of liver, kidneys, intestines, pancreas, bones or muscles including heart-muscle.

CLS 476: Clinical Practice Biochemistry, 2(1+1)

Pre-requisite: CLS 353

Clinical Practice Biochemistry is designed to train students in routine and special chemistry procedures performed in a clinical biochemistry laboratory. The site of the training is in a hospital clinical laboratory with direct supervision of a trained technologist. Completion of this course should provide the knowledge of laboratory skills including overall organization, safety precautions, specimen handling and quality control procedures. Students are expected to perform the routine and special tests on serum/plasma or urine using manual or automated equipment in a hospital set-up.

CLS 481: Environmental Microbiology, 2(1+1)**Pre-requisite: CLS 241**

This course is designed to provide students with an understanding of vital activities that microorganisms perform in nature, and in the broader dimension of organic activities in the total ecosystem. Students would develop an appreciation in the useful and harmful roles of micro-organisms in the food and dairy industries. They will also learn to appreciate the use of microorganisms, microbial quality controls in industrial processes and in the treatment of waste materials.

CLS 482: Clinical Practice Microbiology, 3(1+2)**Pre-requisite: CLS 471**

This course is designed to train the students, under close-supervision, in routine and special techniques performed in a clinical microbiological laboratory at a university hospital or specialist hospital. The completion of this course should provide the students the knowledge of laboratory skills to include overall organization, safety precautions, handling and processing of specimens, data analysis, quality control, and to be familiar with conventional and rapid diagnosis of microbial pathogens using manual and automated equipment in a hospital set up.

CLS 483: Medical Genetics, 3(2+1)**Pre-requisite: CLS 476**

This course deals with the study of structure and function of the cells, control of protein synthesis in prokaryotic and eukaryotic cells. It also covers types of mutation, genetic engineering and its applications in clinical diagnosis and genetic abnormalities.

CLS 484: Clinical Practice Hematology, 2(1+1)**Pre-requisite: CLS 352, CLS 473**

Clinical Practice Hematology intends to orient students of the working system of routine Hematology laboratory and Blood Bank. Students are expected to perform routine laboratory work starting from specimen collection until results are sent to the clinicians. Emphasis will be given to interpretation of results and identification and quick reporting of grossly abnormal life threatening results to clinicians. In the Blood Bank section, students are encouraged to participate in processing of blood products (packed cells, platelet concentrate, fresh frozen plasma, cryoprecipitate, etc.).

CLS 485: Laboratory Management, 2(2+0)

Laboratory Management deals with the study of basic concepts of management, planning, organizing, leading, staffing, controlling as applied to a clinical laboratory set-up like organization of laboratory facilities; fiscal and personnel management; specimens collection, transport and storage; specimens analyses and data collection; quality assurance/quality control program; policy and procedure manuals; infection controls; and laboratory safety.

CLS 486: Departmental Seminar, 2(2+0)

Students should be exposed to the relevant literature in the field, and should also learn how to analyze, prepare and present papers orally before an audience of peers. This will be a rotating seminar (i.e. the subject area and instructor will rotate from semester to semester). Students will be permitted to register for department seminar no more than four times.

HLT 281: Computer Applications for Health Sciences, 2(2+0)

This course focuses in the importance of utilization of computer in health care, education, research, practice, and administration with specific emphasis on medical laboratory applications. The course place emphasis on the clinical information system, the internet, word processing, and data bases.

COLLEGE RULES AND REGULATIONS

Article 1: General Regulations

- (1) All students are required to comply with the provisions of the Student Handbook. They should be familiar with its contents. Ignorance of any provision on the Student Handbook does not excuse any student from being sanctioned for non-compliance.
- (2) The student's enrollment in Shaqra University's College of Applied Medical Sciences at Dawadmi is regarded as an expression of willingness to abide by all the rules and regulations prevailing in the College. Every student, therefore, is committed to the observance of these rules.
- (3) Upon enrollment, students are issued original identification cards (ID) with computer-registered numbers. Students should always have their ID with them to be presented to authorities if requested. The ID is valid as long as the student is enrolled at the College and cannot be confiscated while enrolled.
- (4) The College is aware of the hazards of smoking to health and declares the school premises a non-smoking area.
- (5) Students should be polite and courteous towards all people within the College premises.
- (6) Students are encouraged to use the library facilities and to consult regularly with their Department Heads.
- (7) Special College functions, being part of a student's life, should be attended by all students.

Article 2: Academic Regulations

Section 1. Definition of Terms:

1. **Academic Year** refers to the 2 semesters and a summer if applicable.
2. **Academic Semester** refers to a period approximately 15 weeks of attendance to weekly classes by the students. Student registration and final examination are not part of a regular academic semester.
3. **Summer Term** refers to a period approximately 8 weeks of attendance to weekly classes by the students, excluding the student registration and final examination. Contact hours specified for this term is doubled.
4. **Level** refers to the stage where the student is admitted based on the study plan of a program. The College caters to the levels 3 to 8 of the Clinical Laboratory Science and Nursing programs.
5. **Study plan** refers to the collection of compulsory courses with designated credits. A student should finish the total credits so that he qualifies for graduation and earn a degree in his specialization.
6. **Course** refers to the education imparted in a series of lesson or meetings that meet the requirements of each level as provided in the study plan of a program. The Course has a number, a code, a title and description. A file outlining courses should be kept in the office of the department head for the purposes of follow up, assessment and improvement. Some courses may require pre-requisite or co-requisite courses.
7. **Credit hour** is equivalent to a weekly theoretical lecture approximately 50 minutes or a 120-minute practical session or a 50-minute clinical lesson.
8. **Academic warning** refers to the notice to a student whose cumulative average drops reached the maximum tolerable limit as prescribed by the regulation.
9. **Internal Mark** consists of the attendance, quiz/assignment/activities, 2 midterm examinations and practical examination.

10. **External Mark** consists of the final lecture and/or practical examination results.
11. **Final examination** is administered at the end of each semester.
12. **Total Final Mark** refers to the sum of the internal and external marks obtained by a student in a semester based on 100%.
13. **Grade** refers to the description of the total final mark of a student in a course, expressed as alphabets and/or numerals.
14. **Incomplete Grade (INC)** is temporarily assigned for a student who failed to complete all his requirements in a course on time due to some circumstances beyond control.
15. **In Progress Grade (IP)** is indicated if a course could not be completed in a semester so there's a necessity to continue on to the next semester.
16. **Semester Average** is the total of dividing the grade points by the sum of the credit hours of all the courses in a semester. The grade points are calculated by multiplying the grade value of the course by its credit.
17. **Accumulative Average** is the total of dividing the grade points by the sum of the credit hours of all the finished and passed courses of a student since he first joined the College.
18. **General Assessment** refers to the evaluation of the level of learning of a student during his stay with the College.
19. **Study Load** refers to the total credit hours a student can register in a semester. The maximum and minimum limit of the study load is based on the existing rules of the College.
20. **Academic Record** shows the performance of a student that includes passed courses, credits earned, grades, semester average, accumulative average and academic warnings if any.
21. **Academic Advisor** refers to a teaching staff who is in charge to supervise, guide and monitor a student during his study at the College.

Section 2. Admission of New Students. The Council of Shaqra University determines the number of students to be admitted to the College for a succeeding year, in accordance to the proposal of concerned departments.

Section 3. Requirements for Admission. The following requirements should be met prior to admission to the university/college:

- (1) the applicant should obtain a secondary school certificate or its equivalent inside or outside Saudi Arabia;
- (2) the secondary school certificate should not be more than 5 years old but the council of the university may give exemptions under valid circumstances;
- (3) he/(she) should be of good moral character;
- (4) he/(she) should pass an interview conducted by the university council;
- (5) he/(she) should be medically fit;
- (6) he/(she) should obtain written permission to study from his employer if the applicant is currently working; and
- (7) he should comply with other requirements prescribed by the university council at the time of application.

Section 4. Provisions for Admission. The University gives priority to the applicants with complete requirements, in reference to their secondary school marks and interview result. The rules regarding admission are as follows:

- (1) the deanship of admission and registration, in coordination with the College specifies the procedure of admission examination, interview, submission of admission application and announcement of accepted students;
- (2) students dismissed from other universities should not be admitted;
- (3) priority is given to applicants who meet the requirements stipulated in Section 3;

- (4) a successfully accepted student should be issued an ID that he can use for all official transactions in the university; and
- (5) the deanship of admission and registration keeps a record file of every student such as admission, academic record, disciplinary action if any and other pertinent documents.

Section 5. The Study System. A student should progress to finish the study plan, which consists of 8 levels in accordance to the College policies. An academic year is divided into 2 levels and a summer if applicable.

Section 6. The Level System. A degree program has 8 levels based on its study plan. A student should enroll in each level that offers courses with corresponding credits. Requirements should be fully completed in order for a student to get a passing mark and be promoted to the next level.

Section 7. Registration, Dropping and Adding of Courses. The University Council sets the rules of registration, dropping and adding of courses based on the study plan of a degree program with a purpose of regulating the minimum or maximum courses load of a student. The rules regarding registration, dropping and adding of courses are as follows:

- (1) the deanship of admission and registration specifies the dates of registration, dropping and adding of courses;
- (2) provisions of registration for the 1st and 2nd semesters include:
 - the early registration starts from the 10th week of every semester for the incoming new semester;
 - the confirmation of registration is during the week preceding the semester;
 - a student may cancel his registration within the 3 days of the 1st week of the semester and he can request for postponing his study after 2 weeks of the semester; and
 - a student has a privilege of dropping or adding courses within the period of early registration and confirmation with the guidance of an academic advisor (department head) based on the provisions of the study plan.
- (3) provisions of registration for the summer include:
 - the academic council of the College specifies the courses to be offered during the summer 5 weeks before the end of the 2nd semester;
 - a student is permitted only to register a maximum of 3 courses with at least 10 credit hours; and
 - dropping of courses in the summer should be done within the first 3 weeks of the term upon the approval of the College.

Section 8. Attendance:

1. Prompt and regular attendance in all classes is encouraged for all students throughout the semester.
2. The teaching staff should be expected to begin their classes promptly. However, unavoidable circumstances may cause them to be late for class. In such cases, the following guidelines are to be observed:
 - For 50-minute classes, students should not leave until 15 minutes, for 100-minute classes, students should wait for 30 minutes. A teaching staff may consider his students absent if they leave their classes earlier than the prescribed time.
3. A student who is absent is held responsible for all assignments and for the entire content of the course missed, regardless of the reason for the absence. The student is encouraged to consult with the teaching staff regarding his current academic status.

4. A student is considered absent from class if he is not present within the first third fraction of the scheduled class time period. However, such grace period should not exceed 30 minutes. Thus, a student is considered absent if he arrives after 15 minutes for a 50-minute class; or 30 minutes for a 100-minute class (lecture or practical).
5. It is the student's responsibility to keep a record of his absence however he may verify such from the teaching staff concerned.
6. The teaching staff should enter the absence of a student to the university system on a weekly basis. A student who accumulates 25% total absence is considered dropped from the course. A student with valid reason for his absence is excused but he is considered dropped if he accumulates 30% total absence in a semester.
7. Regulations regarding excused absences are as follows:
 - An excused absence is one authorized by the head of the department or his authorized representative because a student has to attend an official function or activity.
 - Absences due to sickness of not more than 2 weeks are considered excused absences and should therefore not be counted against the student's attendance if it is certified by a medical doctor. In case of absences due to prolonged illness, a student or his duly authorized representative should notify as soon as possible the department head who shall recommend the appropriate action to be taken.
 - Students with excused absences should not be put to a disadvantage. The teaching staff should give special makeup activities, other requirements or special considerations, the manner and form determined by the teaching staff following pertinent college policies.
8. A student is not allowed to take the final examination if he has incurred 25% absence in a semester;
9. A student who is barred to take the final examination due to absences is considered "failed";
10. The Academic Council or his duly authorized representative may allow a student to take the final examination in special cases with valid reasons, provided that the student has not exceeded 30% absence in a semester;
11. A student who is absent during the final examination schedule automatically gets zero mark unless there are valid reasons to excuse his absence and be given a special examination later, upon the discretion of the Department head;
12. A student may withdraw a course or more courses for a semester if he has a valid reason expressed through a letter to the Department head for discussion with the academic council; and
13. If the academic council approves the withdrawal of a student, he is given a grade (W).

Section 9. Postponement of Study. A student is entitled to apply for postponing his study within the 1st week of the semester due to valid reasons. Upon approval, the Dean of the College may grant a postponement period for not more than 2 consecutive semesters or 3 cumulative semesters throughout his stay at the University.

Section 10. Suspension of Study. If a student discontinues his study in a semester without applying for postponement, his registration with the College will be deemed suspended. A visiting student to another university is not considered discontinued from the semester while his studies are ongoing.

Section 11. Re-Registration. A suspended student may apply for re-registration using the same ID number, in accordance to the following rules:

- (1) submission of re-registration request within 4 semester from the date of suspension;
- (2) approval of the re-registration request by the Academic Council or its authorized representative;

- (3) if the 4-semester period lapses, the applicant can register as a new student provided that he fulfills the admission requirements stated in Section 3;
- (4) the re-registration should not be availed more than once;
- (5) the student applying for re-registration should not have been dismissed based on academic violations; and
- (6) grounds for approving the re-registration request by the Academic Council include:
 - the suspension period does not exceed the specified period for the regular study;
 - the reason for suspension should be valid;
 - the student should pass 50% his credits earned; and
 - his accumulated average should not be less than 2.5 out of 5.0.

Section 12. Graduation. A student is eligible for graduation after successfully satisfying all the requirements provided by the study plan of the program. The rules regarding graduation are as follows:

- (1) A graduate will be granted a certificate that bears the student's complete name, university number, civil record number, place and date of birth, name of the College, official seal of the University, degree earned, specialization, general weighted average (GWA) of his grades and the date of issuing the approval of granting the degree to the student by the University Council;
- (2) The certificate should be signed by the Dean or his authorized representative; and
- (3) Issuance of a replacement for a missing graduation certificate is governed by the following rules:
 - the graduate should apply to the deanship of admission and registration for a certificate replacement; and
 - A seal bearing these terms "a replacement of missing" should be affixed on every issued certificate replacement.
- (4) If a student fulfills the requirements for graduation but obtains an accumulative average of less than 2.0, he should register some courses upon the recommendation of the department council and approval of the academic council or its authorized representative in order to increase his average for obtaining the degree based on the study plan.

Section 13. Dismissal from the University. A student can be dismissed from the university due to the following situations:

- (1) If a student is given 3 or more warnings due to his low accumulative average (2.0 out of 5.0);
- (2) If a student failed to fulfill his graduation requirements within the specified duration of study; and
- (3) If a student violates the rules and regulations of the College and found guilty after an investigation by a committee.

Section 14. Examinations. The College may establish a committee to facilitate the preparation of final examination by the teaching staff. The main function of the committee is to review the marks obtained by each student within a period not exceeding 3 days from the date of the examination in any course. The following rules should be observed:

(1) Preparation of Examination Questions:

- Confidentiality should be applied to all aspects of the final examination procedures.
- It is necessary to report any problems encountered by any member of the teaching staff whether while preparing the questions or during or after the conduct of the examination.

- When the same subject is taught by more than one teaching staff, the final examination should be uniform for all concerned students. The examination should be formulated by one of the competent teaching staff handling the course, duly nominated and chosen by the other teachers.
- Questions should be based on deduction rather than blind memorizing. Items should stimulate critical thinking.
- Examination questions for all the courses should cover the whole syllabus. Each member of the teaching staff is required to explain it in a report he submits to the head of the department.
- Copies of examination papers and answer key document should be placed inside sealed envelopes for submission to the control for safe keeping.
- Teaching staffs are assigned as invigilators, with the task of supervising students when taking the final examinations. With the presence of the course teacher, the invigilators receive the sealed examination papers from the person-in-charge thirty (30) minutes before the conduct of the examination.

(2) Checking Examination Papers

- All examination papers should be checked inside the premises of the College only. It is strictly forbidden to take any examination paper outside the College to avoid paper loss or other potential problems.
- Where a course is taught by more than two (2) teachers, a committee should be formulated to check the papers where each member will check one question and recheck the previous question before endorsing the paper to the next member until all questions are checked. Such checking should be based on an answer key paper.
- After checking the papers, they should be returned to the control for future need twenty-four (24) hours after the examination schedule.

(3) Entering the Marks into the System

- Marks should be entered into the system on a certain day to be specified by the head of the department.
- Marks should be entered into the system by two members of teaching staff to avoid any mistakes. This includes midterm grades in addition to final ones.
- After the marks are entered into the system, take a printout and provide a copy to the head of the department and keep another copy for personal record.

(4) Regulations for Students

- The student should not be given more than 2 examinations in a day.
- No student should be allowed into the final examination hall after half an hour from its beginning. Likewise, no student should be allowed to leave the exam hall before an hour from its beginning.
- Cheating in examinations or violating relevant regulations and procedures will be punished accordingly to the student disciplinary regulations issued by the university.
- All mobile phones should be switched off and placed in an area specified by the invigilators.
- A student may submit a letter to request to the Dean of the College or his authorized representative for the re-correction of his examination paper within a period not exceeding the start of the next semester. The Dean may create a committee to do the re-correction. The committee should submit its findings to the Dean for discussion with the Academic Council. The decision of the Academic Council is final and executor.

Section 15. Grading System. The College adopts the following grading system:

Mark	Description	Letter Equivalent	Value of Grade out of 5.00
95 – 100	Excellent +	A+	5.00
90 – 94	Excellent	A	4.75
85 – 89	Very Good +	B+	4.50
80 – 84	Very Good	B	4.00
75 – 79	Good +	C+	3.50
70 – 74	Good	C	2.00
65 – 69	Passed +	D+	1.50
60 – 64	Passed	D	1.00
Less than 60	Failed	F	0.00

An Example of a method to calculate the Semester & Cumulative Average:

First Semester:

Code & No.	No. of Units	Mark	Letter Equivalent	Value of Grade	No. of Points
Islamic 103	2	85	B+	4.5	9
CLS 351	3	70	C	3	9
CLS 352	4	80	B	4	16
CLS 354	3	92	A	4.75	14.25
	12				48.25

First Semester Average = $\frac{\text{Sum of Points (48.25)}}{\text{Sum of Units (12)}} = 4.02$

Second Semester:

Code & No.	No. of Units	Mark	Letter Equivalent	Value of Grade	No. of Points
STAT 106	2	96	A+	5	10
HLT 261	3	83	B	4	12
CLS 361	3	81	B	4	12
CLS 362	4	71	C	3	12
	12				46

Second Semester Average = $\frac{\text{Sum of Points (46)}}{\text{Sum of Units (12)}} = 3.83$

Student's Cumulative Average = $\frac{\text{Sum of Points (48.25+46)}}{\text{Sum of Units (12+12)}} = \frac{94.25}{24} = 3.93$

Section 16. Honors and Awards. The first honor award is granted to a student who obtains an accumulative average of 4.75 – 5.00 upon graduation. The second honor award is given to a student who gains an accumulative average of 4.25 – 4.74 upon graduation. To attain the first or second honor awards, the following should be met:

- (1) the student should have no failed courses;
- (2) the student should have satisfied all the graduation requirements within the prescribed period by the College; and
- (3) the student should have at least 60% residency of study at the University.

Section 17. Transfer from a University to Shaqra University. A student who aspires to transfer to Shaqra University should meet the following requirements:

- (1) The student should have studied in a recognized university;
- (2) The student should not have been dismissed from a university due to disciplinary or academic reasons;
- (3) The student should satisfy the admission requirements of Shaqra University; and
- (4) Upon admission, the College should review the academic record of the student and compare it to the existing study plan. Similar courses obtained from his previous university may be credited based on the course description.

Section 18. Transfer from a degree program into another within the College. A student may apply transfer from a degree program into another with the Dean of the College, in accordance to the following requirements:

- (1) met the requirements of the degree program the student intends to transfer to;
- (2) the transfer should be done once only during the duration of the study; and
- (3) other conditions the college council may impose.

Article 3. Disciplinary Regulations:

All students in the College should adhere to the disciplinary regulations of Shaqra University.

Section 1. Offenses. A breach of the existing rules and regulations of the College is regarded as disciplinary offense such as follows:

- (1) actions against the university system and facilities;
- (2) inciting or masterminding non-attendance to scheduled classes, clinical sessions, tutorials, workshops and other activities commissioned by the College;
- (3) any offending words and actions that affect the honor and dignity of the College and its personnel;
- (4) cheating in the quiz and examinations or attempting to cheat;
- (5) breach of the examination regulations;
- (6) organizing assemblies inside the College;
- (7) destroying facilities or equipment of the College; and
- (8) deliberate abuse of the College facilities and other accessories like residential accommodation units.

Section 2. Disciplinary Sanctions. The penalties for the offenses stipulated in Section 1 are the following:

- (1) warning;
- (2) written reprimand;
- (3) depriving the student to enjoy some of the benefits of the university;
- (4) forfeiting results of examinations and giving a failing grade;

- (5) disallowing a student to take the final examination;
- (6) suspension;
- (7) dismissal from the college; and
- (8) expulsion from the university.

Section 3. Discipline Committee. The Dean of the College can appoint the composition of the discipline committee. The committee should conduct an investigation regarding an offense committed by a student and submit results to the Dean for final imposition of the just disciplinary sanctions.

College Working Committees & Units

Section 1. Community Service:

Vision:

Excellence and leadership in the field of service and local community development of Al-Dawadmi through a variety of programs aimed at different segments of that community.

Mission:

- Introducing innovative practices in the field to help achieving sustainable and comprehensive development through:

1. The quality of scientific material presented and the experience of the instructor.
2. Provide scientific material in modern ways & training methods.
3. Provide sufficient amount of information and skills related the scientific article in hand.

General Objective:

- Deepening the concept of partnership between the College of Applied Medical Sciences and the local community.
- Designing developmental programs of lectures, workshops, seminars and awareness campaigns to support the development of health education for community members.
- Conducting studies and applied research and the rules of health data.

Section 2. Academic Counseling:

The professional academic advising service aims to identify the problems that hinder a student's ability to attain his educational goals and complete his academic requirements in the university. The academic advising unit provides assistance and support among the students by raising their awareness on their academic responsibilities and encourages them to exert effort to solve their academic and personal problems that hamper their educational goals. This is done by providing the students with an avenue to discover their skills for improving their academic achievement and to discuss their scientific ambitions. The primary objective of an academic advisor is to guide the students in the selection of appropriate courses based on the study plan and finish a degree successfully; help them overcome the obstacles encountered in the study; and provide advice on matters that affect their educational track based on the academic policies and regulations that apply to students.

Section 3. Students Activities:

A side from the provision of enhanced academic program, the College invests in recreational student activities among its students away from the routine classroom setting but such activities must be founded with understanding of scientific aspects of decision making that contribute to discovering the capabilities and capacities of students; refining their talents and abilities; improving their self-confidence; and inspiring them to serve Islam and their country. Thus, it helps to achieve the goals of the students as well as build the body and mind according to the teachings of Islam and good morals. By providing the students with opportunities to enhance their skills and good habits, they also become active members of the community apart from developing their skills, talents, abilities, social life and personality. Once students participate in activities like sports, cultural, artistic, social, scientific, scouting and others, they begin to become creative in life. They change for the better as a result of discovering their talents and abilities. These activities provide the great opportunities to satisfy the wishes, capabilities and interests of the students based on the support of the university depending on their character and abilities.

Section 4. Graduates Affairs:

This committee is tasked to maintain a communication with alumni and community for the continual improvement and upgrading of the quality of college graduates as well as bases in enhancing the current academic curriculum to meet the demands of the local, regional and global labor markets. It further aims to open channels of communication between the college and health institutions for a meaningful and constructive cooperation to serve the faculty, alumni and community with a goal to continuously improve the educational process and ensure the quality of graduates to fit the labor market requirements.

Responsibilities:

- Informs and organizes the graduates to participate in courses, seminars and workshops.
- Links the college and health institutions for proper deployment of graduates.
- Notifies health authorities and the local community about the role of the graduates based on their specialization.
- Invites graduates to college events and programs for continuing development.
- Creates a database for college graduates.
- Provides a platform for graduates through unity to address their issues and concerns as well as their aspirations and collective actions to overcome difficulties they encounter in their employment.
- Facilitates constant communication between alumni and the academic and scientific community to allow exchange of views, update their information, and follow through relevant scientific developments.

DR. NAHED ALQUWEZ
Dean of the College

EDITORIAL HEAD	DR. JUNEL BRYAN BAJET
EDITORIAL MEMBER	DR. KHALAF ALOTAIBI DR. GABBY CACHO DR. JONAS CRUZ DR. EJERCITO BALAY-ODAO DR. JENNIFER MESDE DR. SHIELA SORIANO DR. ENTESAR KANDEEL
ACADEMIC REVISION & COORDINATION BY	DR. KHALAF ALOTAIBI