**Republic of Iraq**

**Ministry of Higher Education**

**And Scientific Research**

**University of Baghdad**

**College of Pharmacy**



**Self-Assessment Report**

**Clinical Laboratory Sciences Department Program**

**College of Pharmacy – University of Baghdad**

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***Ministry of Higher Education& Scientific Research***

***Baghdad University/ College of Pharmacy***

***Clinical Laboratory Sciences Department/ Self assessment report***

***PREFACE***

The present report is the first self-assessment report written for the Department of clinical pharmacy at the College of pharmacy - University of Baghdad. The report represents the first step towards achieving Quality Assurance in accordance with international standards, which is a strategic and important decision for the scientific and educational process of the department.

The report includes in its parts a definitive introduction about the college & department and their history, scientific disciplines and awarded degrees, the system of study and curriculum, organizational structure, the general features of the policy of the department in the various fields and aspects, also the report reviews the required criteria for the self-assessment and the related appendices according to specifications of SAR.

The report also contains (SWOT) analysis for the (Strengths, Weaknesses, Opportunities, and Threats). SWOT analyses is a very important tool for planning and developing strategies and policies for the office in question, and we have tried in our writing of this paragraph to be very precise in our diagnosis of the strengths and weaknesses, as well as opportunities and threats facing the scientific and educational process.

**Chapter One- Introduction**

**\*History:**

The College of Pharmacy, University of Baghdad was established in 1936 to prepare pharmacists providing pharmaceutical and chemical services required by the nation. The college occupied the building temporarily attached to the Royal Hospital in **Bab Al- Muadam** region in Baghdad. In the **1947/1948** a branch of scientific study of chemistry bachelor's degree was introduced and the college was named Faculty of Pharmacy and Chemistry until the year 1958 / 1959 where the college was attached to the Faculty of Pharmacy at the University of Baghdad instead of being affiliated to the Directorate of General Health in the Ministry of the Interior Affairs and the Ministry of Social Affairs, and then the Ministry of Health over the previous period. In the year of **1959 / 1960** the certificate granted to college graduates was a Bachelor of Science in Pharmacy. The postgraduate studies in the college started at the academic year (1972 –1973) to obtain the M.Sc. degree in Pharmaceutical science in its four departments: Pharmaceutics, Pharmaceutical Chemistry, Pharmacognosy, pharmacology and Toxicology and in the academic year (1975–1976) the Ph.D. degree study started in Pharmaceutical Chemistry.

In 1979/ 1980 the college changes annulling studying system into semester model. The duration of study is five years, after which the graduate obtains a bachelor degree in pharmacy. To keep up with the evolution of scientific development, new branches have been added to the college, these include a branch of Clinical Laboratory Sciences in the year of 1984; the branch of Clinical Pharmacy in the year of 1993, bringing the number of the college departments into six instead of four.

The department of clinical laboratory sciences/ University of Baghdad separated from pharmacology& toxicology in 1984 in order to offer educational programs that cover scientific fields include basic sciences: Human biology, mathematics& biostatistics, computer sciences, human anatomy, histology, physics, human rights, medical bacteriology, parasitology& virology, democracy, Arabic language, biochemistry, public& immunology as well as clinical chemistry & lab training. These courses required as a part of the requirement for the Bachelor Degree (B.Sc.) in Pharmacy. The department in addition to the undergraduate courses had postgraduate study courses that include: Higher Diploma, Master (M.Sc.), and Doctor of Philosophy in clinical laboratory sciences (PhD).

Vision and mission statements:

\*Vision:

The College of Pharmacy, University of Baghdad, strives to achieve excellence in teaching, research, and public services to be recognized as one of the leading Colleges of pharmacy in the region, also the clinical laboratory sciences department curriculum complete the other departments in the college to produced a pharmacist at higher degree of medical learning and education in order to work in hospital, health centers, medical laboratory as well as in pharmacy. The department aims to be one of the leading programs in the country and region regarding clinical pharmacy and patient education and research.

\*Mission:

The mission of the College of Pharmacy/ University of Baghdad is to serve the nation through:-

1- Graduating highly qualified ethical pharmacists. Educate, train and prepare students to become leading pharmacists and scientists, performing their roles and responsibilities for public service in delivering pharmaceutical care, education, and research.

2. Building the leadership qualities in graduates through teaching how to lead, problem solving, team work, quality considerations, and professionalism at work.

3. instilling in graduates the spirit and commitment for acquiring knowledge and community service. Provide scientific advice to maximize and establish synergistic collaborations with the health care systems and industrial partners both in governmental ministries and private sectors for better patient care and public service.

4. Contributing ideas of projects and carrying out research for the benefit and development of the community. Advance scientific discovery and development.

5. Nurturing and care of outstanding students and encouraging them to use their skills.

6. Student counseling, guidance and strengthening of citizenship spirit.

7. Providing good working environment for students, faculty, and other personnel with emphasis on high academic, professional and ethical standards within the university campus. Freedom of opinions and respect of others opinions and encouragement in exchanging knowledge, in other meaning attain international standards in pharmaceutical education.

\*Department Educational Objectives (DEO):

Since its establishment, the department worked hardly and continuously based on his noble mission in the society to achieve a number of strategically goals and objectives, the most important are:

1. Make the graduated students not only able be familiar with reading and processing the medicine prescription, be able to use the clinical analysis in diagnosis of diseases.
2. Make the graduated students able to communicate with all people at various education levels, able to educate the patients about their medications.
3. Make the graduated students not only able to dispense medications according to medical prescriptions in hospitals and private pharmacy safely, also able to act in medical teaching laboratory.

The process of review and evaluation of the clinical laboratory sciences department is done through the following assessment channels:

1. Alumni survey.

2. Employer’s survey.

3. Faculty discussion.

4. Student’s survey.

5. Related institutions consultations (Teaching medical hospitals& laboratories, research centers in universities& ministries).

**\* Continuous Improvement:**

The most important responsibilities and tasks performed in the department for the purpose of continuous improvement of the educational program are:

1- Continuous improvement of the educational program is a continuous task that is carried out by the Department through the Scientific Committee. Curriculum revisions or corrective actions proposed by committee are presented to all department faculty members in General Board meetings for discussion, review, and approval. The department faculty actively participates in board discussions leading to a finalized set of curriculum revisions and / or corrective actions.

2. Continuous improvement of faculty through training programs in& out country.

3. Encouraging a number of faculty members to publish their researches in international journal with high impact factor.

4. Providing laboratories with new equipments and instruments.

5. Purchasing a number of books with original copy for undergraduate& postgraduate students.

6**-** Increase in extra-curricular activities for students such as setting up scientific conferences, meetings and seminars

7- General services such as reconstruction and rehabilitation of classrooms and rooms in the department.

\*ORGANIZATIONAL STRUCTURE:

The college must be organized and staffed to facilitate the accomplishment of its mission and goals. The college administration must have defined lines of authority and responsibility. The organizational structure of the College of Pharmacy is diagrammed in diagram below; administratively the College is organized with a dean, who is assisted by an assistant dean for academic affairs, an assistant dean for student affairs; an assistant dean for administrative affairs. The Dean’s Office is the executive office of the college. It is the dean’s duty, to enforce the rules of the college, and to administer discipline in the case of violations.

The Associate Dean for Academic Affairs is responsible for all academic matters of the College. The Assistant Dean for Student Affairs coordinates all student related organizations and activities, including admissions, registration, counseling, and academic advising so that students may develop as caring, ethical, and knowledgeable health care professionals.

The scientific, technical and administrative structure of the department includes a set of integrated elements. Each one of these elements of the structure has authorities, duties and responsibilities which are specified accurately so that the department can works well and achieve the required goals through the integrity of work of these elements.



**Diagram: Organizational structure of the college of pharmacy**

**\*Faculty in the College of Pharmacy:**

***\*College Board:***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Functional work** | **Academic**  **certificate** | **Scientific**  **grade** | **Faculty member** | **No.** |
| Dean of The College | PhD | Asst. Prof. | Dr. Ahmed Abbas Hussein | 1 |
| Associate Dean for Administrative Affairs | PhD | Asst. Prof. | Dr. Mohamed Hassan Mohamed | 2 |
| Associate Dean for Academic Affairs | PhD | Asst. Prof. | Dr. Shaimaa Nazar Abd Alhammid | 3 |
| Associate Dean for student Affairs | **M. Sc** | Lecturer | Maha Noori Hamd | 4 |
| Chief of pharmaceutics department | PhD | Asst. Prof. | Dr. Jafer Jaber | 5 |
| Chief of the pharmaceutical chemistry department | PhD | Lecturer | Dr. Ahlam Gameel Bunni | 6 |
| Chief of the drugs and medicinal plants department | **M. Sc** | Lecturer | May Sadeek Taha | 7 |
| Chief of the pharmacology and toxicology  Department | PhD | Asst. Prof. | Dr. Sajeda Hussain | 8 |
| Chief of the clinical laboratory sciences department | PhD | Prof | Dr. mohammed abass taher | 9 |
| Chief of clinical pharmacy department | M. Sc | Asst. Prof. | Dr. Haider Fakry | 10 |
| Council secretary | M. Sc | Asst. Prof. | Eman Baker Hazim | 11 |

**Chapter Two**

**Organizational structure of Clinical Laboratory Sciences department**

***\*Faculty of Clinical Laboratory Sciences***:

***\*SWOT Analysis for clinical laboratory sciences department***

Therefore, the following strategic objectives have been developed to address the weaknesses and threats related to various aspects of those issues:

1. Recruit& encouraging outstanding students.

2. Honoring, caring and retain outstanding faculty and staff.

3. Promote a strong sense of community and collegiality among the students, faculty, staff and alumni.

4. Improve teaching and learning through continuous assessment.

5. Encouraging research and consultation that address the immediate and long duration needs of the societies.

|  |  |
| --- | --- |
| **STRENGTHS (INTERNAL )** | **WEAKNESSES (INTERNAL)** |
| **1- Faculty:**  **a) A very good experience in academic education for the faculty members.**  **b) A very good number of young and dynamic faculty members.**  **c) Sufficient number of faculty members.**  **d) Good salaries and wages.**  **2- Curriculum: Designed to meet both local needs and international standards for pharmaceutical & clinical sciences in both practical & theory materials.**  **3- Good relationships between employees and students of the department.**  **4- Large and continuous desire for development and strong motivation for service for most employees of the department.** | **1- Quality and quantity of current students.**  **a) The lack of motivation to excel.**  **b) The culture of being “spoon-fed”.**  **c) Low scientific level & inadequate language preparation of the student.**  **d) Inadequate training in critical or analytical thinking.**  **2- Curriculum: Inadequate classroom assessment.**  **3- Complicated and restrictive hiring procedures.**  **4- Insufficient funding for scientific researches.** |
| **OPPORTINITIES (EXTERNAL)** | **THREATS (EXTERNAL)** |
| **a) Availability of international conferences, workshops, meetings, seminars.**  **b) Possibility of utilizing local talent for teaching and research.**  **c) New trends in multi-disciplinary professional education and new teaching methods.** | **a) Rising local and regional private colleges.**  **b) Accessibility of international universities& colleges via far distance education.**  **c) Instability of the country situation (political, security, economic....)**  d) **lack of** **Institutional support for sabbaticals travels.** |

***SWOT Analysis for the Organizational Structure of Clinical Laboratory Sciences Department***

**Chapter Three**

**The educational goals of the Department of Clinical Laboratory Sciences**

***\*Objectives:***

* Make the graduated students know how to alert the patients in governmental offices, hospital, medical centre, pharmacy& clinical laboratory.
* Train the students how to make the different medical assessment, write the reports that help the doctors for diagnosing the diseases.

***\*The goals of teaching and learning:***

1. - Work to make a graduate of the Faculty of Pharmacy active ingredient and a product of the society through the application of the goals of the section.
2. - Increase student information about communicable &non communicable diseases, how to prevent them, how to diagnose & treat by using new techniques in lab determination & findings.
3. - Increase student information about the mechanism of human bodies action, medicaments& drugs usage to stop& kill causative agents such as bacteria, parasite & virus.
4. - Increase the student information about the metabolic processes inside the human bodies in healthy& patients.
5. - The ability of graduates & postgraduate students to analyze data of research by special biostatistics program, drawing different types of structures of drugs through learning computer sciences programs, mathematic& biostatistics.
6. – Increase the ability of graduate pharmacist to work in pharmacy, laboratory, hospital& teaching medical centers.

**Program Structure:**

**First year level: Human biology**

**Computer sciences**

**Mathematics& biostatistics**

**Histology**

**Human anatomy**

**Physics**

**Human rights**

**Second year level: Medical bacteriology**

**Parasitology& virology&immunology**

**Democracy**

**Arabic language**

**Third year level: Biochemistry | and ||**

**Pathophysiology**

**Forth year level: Public health& immunology**

**Fifth year level: Clinical chemistry**

**Lab training**

**\*Methods adopted for the follow-up education programs:**1 -Written examinations   
2 - Oral exams   
3 - Preparation of reports on scientific topics   
4 - Group discussions.

5-graduated project

6- Open exam.

**Chapter Four:**

**The staff and facilities**

**\*The staff:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Faculty Member** | **Highest**  **Degree** | **Rank** | **Position** |
| **Mohammed Abass Taher** | **(PhD)** | **Prof.** | **Head of the Department** |
| **Zainab Majeed Hashim** | **(PhD)** | **Asst. Prof.** | **Co-assistant head of the department** |
| **Taha Hamed Al- Shebeeb** | **(PhD)** | **Asst. Prof.** | **Teaching staff** |
| **Shatha Hussein Ali** | **(PhD)** | **Prof.** | **Teaching staff** |
| **Abdullah Abdulhadi Abdullah** | **(PhD)** | **Asst. Prof.** | **Teaching staff** |
| **Eman Saadi Saleh** | **(PhD)** | **Asst. Prof.** | **Teaching staff** |
| **Ali Sabah Salman** | **(Msc.)** | **Asst. Lecturer** | **Teaching staff** |
| Ajwad Awad Mohammed | **(PhD)** | **Lecturer** | **Teaching staff** |
| **Nathera Mohammed Ali** | **(PhD)** | **Lecturer** | **Teaching staff** |
| **Seenaa Sadik Amin** | **(PhD)** | **Lecturer** | **Teaching staff** |
| **Inaam Ahmed Amin** | **(M. Sc)** | **Asst. Prof** | **Teaching staff** |
| **Zahraa Nagi Mohammed Ali** | **(M. Sc)** | **Lecturer** | **Teaching staff** |
| **Mayada Nuofaq** | **(M. Sc)** | **Lecturer** | **Teaching staff** |
| **Suad Aziz Hassan** | **(M. Sc)** | **Lecturer** | **Teaching staff** |
| **Hanan Ibraheem** | **(M. Sc)** | **Lecturer** | **Teaching staff** |
| **Suheir Hassan** | **(M. Sc)** | **Lecturer** | **Teaching staff** |
| **Ragaad Abd Al- Wahaab** | **(M. Sc)** | **Lecturer** | **Teaching staff**  **(deceased)** |
| **Ali Abd Al-Hussein** | **(M. Sc)** | **Lecturer** | **Teaching staff** |
| **Maysoon Abd Al- Zahraa** | **(PhD)** | **Asst. Prof** | **Teaching staff** |
| **Salema Sultan** | **(M. Sc)** | **Lecturer** | **Teaching staff** |
| **Aseel Ismael** | **(PhD)** | **Lecturer** | **Teaching staff** |
| **Najwan Kysaar** | **(M. Sc)** | **Asst. Lecturer** | **Teaching staff** |
| **Iman Sadik** | **(M. Sc)** | **Asst. Lecturer** | **Teaching staff** |
| **Amnaa Ali** | **(M. Sc)** | **Asst. Lecturer** | **Teaching staff** |
| **Khalid Abd Al- Hussein** | **(M. Sc)** | **Asst. Lecturer** | **Teaching staff** |
| **Shymaa Abd Al- Zahraa** | **(M. Sc)** | **Asst. Lecturer** | **Teaching staff** |
| **Faris Ali** | **(M. Sc)** | **Asst. Lecturer** | **Teaching staff** |
| **Wafaa Abd Al- Ameer** | **(M. Sc)** | **Asst. Lecturer** | **Teaching staff** |
| **Noor Nyhad** | **(B. Sc)** | **Demonstrator** | **Teaching staff** |
| **Ayeshaa Amaar** | **(B. Sc)** | **Demonstrator** | **Teaching staff** |
| **Nada Ahmed** | **(B. Sc)** | **Demonstrator** | **Teaching staff** |
| **Ahlam Eslybi** | **(B. Sc)** | **Demonstrator** | **Teaching staff** |
| **Dalia Muhanad** | **(B. Sc)** | **Demonstrator** | **Teaching staff** |
| **Tyseer Hamid** | **(B. Sc)** | **Demonstrator** | **Teaching staff** |
| **Wasaan Galib** | **(B. Sc)** | **Demonstrator** | **Teaching staff** |
| **Saif Majed** | **High Diploma** | **Demonstrator** | **Teaching staff** |
| **Elaf Basim** | **(B. Sc)** | **Demonstrator** | **Teaching staff** |
| **Rusul Mohamad** | **(B. Sc)** | **Demonstrator** | **Teaching staff** |
| **Layla Fathel** | **Diploma** | **Secretary** | **Department staff** |

**\*Faculty development**

Is the introduction of the assistant lecturers after completing their master's and access to scientific title (teacher assistant ) course s to teaching methods that work on the development of their teaching skills and their ability to deliver the information to the student

Include faculty professional development activities : attending seminars and  
Lectures , and participate in workshops , attend professional conferences ,  
Writing professional activities , review activities , and research new and innovative ,training programs inside and outside Iraq.  
  
• leave ( study abroad ) : a program that allows institutional faculty have not completed a Ph.D. degree and be in a tenure or tenure track position for get a chance to study abroad, travel, also good monthly salary. Those who are not in the tenure track positions also participate through temporary contracts with the same benefits.

Many of the teachers had successfully participated in the program and have been successfully kept in the department.  
  
• Center for Continuing Education Center offers professional development Courses and training for faculty and teaching assistants, graduate recently admit. Each required of faculty members and graduate teaching assistants for the new year and took at least one of training in the first year of operation.

\*Facilities:

Various & specialized lab, class room, seminar & meeting places, ordinary garden for many types of plants as well as medical plants.

**Chapter Five:**

**Students, Teaching, Learning and Assessment**

**\**Students Admissions***

The student had an Iraqi secondary school certificate, or its equivalent & acceptance is centrally controlled by the Ministry of Higher Education and Scientific Research. The student, s applicant must submit the required documents within a specified period. If the student has graduated from a high school system outside Iraq must have completed twelve years of combined elementary and high school studies from a recognized school. Require to provide an equivalency certificate from the Iraqi Ministry of Education.

***\*Evaluating Student Performance***

These assignments are generally a combination of

Written & oral examinations

Quizzes

Homework

Laboratory reports

Projects

Certain assignments are graded by a group of the faculty or instructors.

*\*Education programs*

**1-Human Biology:**

The student Learns cell structure, type of tissues, structure and function of body organs, inheritance and Mendel’s law, chromosomes division and how to deal with terms like allele, locus, homozygous and heterozygous.

2-**Mathematic and Biostatistics**

Gives students the ability to deal with the concept of Mathematics and Statistic, emphasizes the knowledge and skill required to efficiently discharge the duties and responsibilities of the pharmacist. The course deals with the concept of basic Mathematics and application of Biostatistics in the medical field. Upon completion of the course students will be able to understand the applications of statistics in medical field.

**3-Computer Science**

Gives students the ability to deal with the concept of computer science, emphasizes the knowledge and skill required to efficiently discharge the duties and responsibilities of the pharmacist. The course deals with the concept of basic computer and application of it in human life and medical field. Upon completion of the course students will be able to understand the computer terminology and abbreviations used to describe the lecture, and the application programming languages.

**4-Histology**

Study the histological structure of the human body. It is meant primarily to give the student a foundation for advanced study in health care, physiology, pathology, and other fields related to health and fitness. At the end of the course the student should be familiar with the histological description of the human body.

**5- Human Anatomy**

Study the position of different organs in the thoracic and abdominal cavity including: digestive system, circulatory system, lymphatic system, respiratory system, urinary system, reproductive system, endocrine system, nervous system and skin.

**6- Medical Physics**

Gives students the ability to deal with the concepts of physics, emphasizes the knowledge and skills required to efficiently discharge the duties and responsibilities of the pharmacist. The course deals with the concept of basic physics and application of physics in the medical field. Upon completion of the course, the students will be able to understand the physical terminology and abbreviation used to describe the lecture, and the application in medical field.

**7- Medical bacteriology**

Medical bacteriology to learn different types of bacteria, the shape and nomenclature of all microorganism, the parts of microscope & how can use it for diagnosing the different types of bacteria, classify the bacteria according their living as aerobic and non aerobic & according their shape as rode& spherical as well as according their reaction with stain such as gram negative& positive. How do manage with different media suitable for each type of bacteria& to culture the bacteria in media and how to made sterilization. Provide a basic understanding of the morphology, anatomy, physiology and genetics of bacteria in addition, the methods of handling, visualizing, characterizing identifying of bacterial disease.

**8- Parasitology, Virology & Immunology**

Give the student the most important information about the parasitic diseases mostly in Iraq& their transmission. Studying most diseases deal with immunity as well as auto-immune diseases, different defense mechanism.

**9- Biochemistry I**

Give the student clear picture about the nature of materials (protein, lipid, carbohydrates and enzymes).

10- **Pathophysiology**

Describe the basic concepts of pathophysiology at the cellular level related to injury, the self-defense mechanism, mutation, and cellular proliferation. Outline basic pathological factors that influence the disease process. Describe the impact and abnormal functions upon the organ (s) associated with the disease process of targeted body systems. Describe clinical manifestations associated with the diseased organ(s).

**11- Biochemistry II**

Study the metabolism process of different compounds such as protein, carbohydrates, lipids, nucleic acids and hormones

**12-Public health**

This course enables the students to understand the principles of public health and the art of preventing disease, promoting health and prolonging life, through organized effort of society.

**13- Clinical Chemistry**

To provide knowledge about chemistry of human body & changed to be associated with different diseases through laboratory analysis that aid in diagnosis of diseases to providing proper health care for patients.

**14- Clinical Lab Training**

It provides general information about the biochemical basis of disease and about the principles of laboratory diagnosis; it supplies specific guidance on the clinical value of chemical investigations, indicating their range of application and limitations as well as relating results of laboratory tests to the process of clinical diagnosis and management as these might applied to individual patients.

**\*Assessment methods**

* Written examinations
* oral exams
* Preparation of reports on scientific topics
* Group discussions
* Class activities
* Lab. Exam
* mid-term& Final exam

\*Teaching and Learning Methods

* Power Points.
* White board,
* Simulators
* Guidelines
* Seminars
* Skill lab.
* Lecture/ questions and answer
* Demonstration: Small groups assignment
* Case study

Chapter Six:

Development and Review of all curricula

*\*The curriculum:*

# **Human Biology: First year level/First semester**

**Course number: 103051111**

**Theory credit hr/ week=2**

**Lab credit hr/ week=1**

|  |  |  |
| --- | --- | --- |
| **Laboratory Work** | **Theoretical Content** | **week** |
| **Cell& organelles** | **Cell& Organelles** | **1** |
| **Cell division(mitosis& meiosis)** | **Cell division(mitosis& meiosis)** | **2** |
| **Epithelial tissue** | **Epithelial tissue** | **3** |
| **Connective tissues(bone& cartilage)** | **Connective tissues(bone& cartilage)** | **4** |
| **Blood& lymph** | **Blood& lymph** | **5** |
| **Muscular& nervous tissue** | **Muscular& nervous tissue** | **6** |
| **Membranes** | **Membranes** | **7** |
| **Inflammation** | **Inflammation** | **8** |
| **Nutrition** | **Nutrition** | **9** |
| **Digestive system** | **Digestive system** | **10** |
| **Respiration** | **Respiration** | **11** |
| **Excretory system** | **Excretory system** | **12** |
| **Genetics** | **Genetics** | **13** |

**# Mathematics& Biostatistics- First year level/First semester**

**Course number: 103051115**

**Theory credit hr/ week=3**

|  |  |
| --- | --- |
| **Theoretical Content** | **Week** |
| Mathematics: General concepts; coordinate and graph in plane; inequality; absolute value or magnitude | **1** |
| function and their graphs; displacement function; slope and equation for lines | **2** |
| Limits and continuity: Limits; theorem of limits; continuity; continuity conditions. | **3** |
| Derivatives: Line tangent and derivatives; differentiation rules; derivative of trigonometric function; practice exercises. | **4** |
| Integration: Indefinite integrals; rules for indefinite integrals; integration formulas for basic trigonometric function; definite integrals | **5** |
| Properties of definite integrals; practice exercises. | **6** |
| Biostatistics: General concepts of statistics; statistical methods | **7** |
| Probability concepts: Properties of probability | **8** |
| Probability distribution of discrete variable; binomial distribution, Poisson distribution; | **9** |
| continues probability distribution and normal distribution, review questions and exercises | **10** |
| The concept of central tendency: Mean of sample and mean of population; median; mode | **11** |
| Deviations and variation: Deviation; dispersion and variability; standard deviation and variance | **12** |
| coefficient of variations; standard error; correlation analysis.(regression model and sample regression equation | **13** |
| Test( T-test ,Z-Test ,Chi & ANOVA) | **14** |
| Application of statistic in medical field; review questions and exercises. | **15** |

**# Computer Sciences- First year level/First semester**

**Course number: 103051114**

**Theory credit hr/ week=2**

**Lab credit hr/ week=1**

|  |  |  |
| --- | --- | --- |
| **Laboratory Work** | **Theoretical Content** | **Week** |
| Microsoft Word applications | General concept: Information technology (IT); Computer systems (hardware, software, user) | **1** |
| Microsoft Word applications | types of computers; major parts of the computer | **2** |
| Application of programs for statistical evaluation of data. | Hardware: Hardware; input and output devices; central processing unit (CPU). | **3** |
| Basics for chemical and biological drawings | Memory, storage media and performance: Memory; kind of memory (RAM, ROM, cache memory, flash memory); | **4** |
|  | data representation in memory; storage devices (secondary storage); | **5** |
|  | Kind of storage devices; computer performance. Computer software:  Software (system software, application software); | **6** |
|  | Computer software: Software (system software, application software); | **7** |
|  | programming languages; generation of programming languages (machine language, assembly language, high level language, application generators, objective oriented language); | **8** |
|  | programming languages; generation of programming languages (machine language, assembly language, high level language, application generators, objective oriented language); | **9** |
|  | Programming languages; generation of programming languages  (machine language, assembly language, high level language, application generators, objective oriented language); | **10** |
|  | (Commercial, shareware, freeware and public domain); interface, multimedia; system development. | **11** |
|  | Data Communication and network: Data communication; work group computing; type of networks; local area network (LAN); | **12** |
|  | Wide area network (WAN); WAN- Devices (HUB, router, get way, bridge, repeater); networks topologies; data communication hardware; protocols. | **13** |
|  | The internet: Internet development; using the internet; internet services; search engines; electronic mail; general concept of internet; | **14** |
|  | Viruses and type of virus; protection from virus; security system and information security; data protection act; computer crimes. | **15** |

**# Histology- First year level/ second semester**

**Course number: 103051121**

**Theory credit hr/ week=2**

**Lab credit hr/ week= 1**

|  |  |  |
| --- | --- | --- |
| **Laboratory Work** | **Theoretical Content** | **Week** |
| Circulatory system (Artery & Vein) | Circulatory system( heart) | 1 |
| Lymphatic system (Thymus gland & spleen) | Circulatory system (vessel) | 2 |
| Lymphatic system (Lymph node & Islet of Langerhans) | Lymphoid tissue | 3 |
| Nervous system (Cerebral & cerebrum cortex) | Lymphoid nodule (MALT) & Tonsils | 4 |
| Nervous system (Spinal cord) | Nervous system | 5 |
| Respiratory system (Trachea & lung) | Respiratory system | 6 |
| Digestive system (Tongue, Esophagus & Stomach) | Digestive system parts& job | 7 |
| Digestive system (Small & Large intestine) | Digestive system with glands | 8 |
| Accessory glands of the digestive system (liver & Pancreas) | Endocrine system: pituitary gland | 9 |
| Endocrine system (Pituitary & Thyroid gland) | Endocrine system: Adrenal, Thyroid, Parathyroid | 10 |
| (Adrenal & pineal gland) | Male reproductive system& Excretory genital ducts- | 11 |
| Male reproductive system (Testes & prostate gland) | Male reproductive system/ Excretory genital glands: | 12 |
| Female reproductive system (Ovary & Uterus) | Female reproductive system | 13 |
| Urinary system (Kidney & Urinary bladder) | Urinary tract system: | 14 |
| Skin (Thick & Thin skin) | The skin: Thick & Thin skin | 15 |

**# Human Anatomy- First year level/ second semester**

**Course number: 103051127**

**Theory credit hr/ week= 1**

**Lab credit hr/ week= 1**

|  |  |  |  |
| --- | --- | --- | --- |
| **Laboratory Work** | **Theoretical Content** | | **week** |
| **Location of vascular system Heart, Arteries, Veins** | **Circulatory system: Location of vascular system Heart, Arteries, Veins** | | **1** |
| **Location of lymphatic system (Lymphatic capillary)** | **Location of lymphatic system (Lymphatic capillary)** | | **2** |
| **location of the (Thymus gland, Spleen & Lymph** | **location of the (Thymus gland, Spleen & Lymph nodes)** | | **3** |
| **Lymphoid nodule (MALT) & Tonsils** | **Lymphoid nodule (MALT) & Tonsils** | | **4** |
| **Central & Peripheral nervous system by location** | **Central & Peripheral nervous system by location** | | **5** |
| **Conducting portion (Nose, naso-pharynx, ,Trachea, Bronchus & Bronchioles). Respiratory portion (Lung)** | **Conducting portion (Nose, Nasopharynx, Trachea, bronchus & Bronchioles). Respiratory portion (Lung)** | | **6** |
| **location of different parts of digestive tract (Oral cavity, Mouth, Esophagus & Stomach)**  **Small &Large intestine, Rectum & Anus** | **- location of different parts of GIT (Oral cavity, Mouth, Esophagus & Stomach)**  **Small &Large intestine, Rectum & Anus.** | | **7** |
| **Glands associated with the digestive tract by location (Salivary glands, Pancreas, Liver & Gall bladder** | **Glands associated with the digestive tract by location (Salivary glands, Pancreas, Liver & Gall bladder).** | | **8** |
| **location of the pituitary gland** | **location of the pituitary gland** | | **9** |
| **Location of the Adrenal, Thyroid, Parathyroid, Islet of Langerhans & Pineal glands** | **Location of the Adrenal, Thyroid, Parathyroid, Islet of Langerhans & Pineal glands.** | **10** | |
| **Location of the testes. Excretory genital ducts Excretory genital glands Seminal vesicles, Prostate & Cowper's glands** | **Location of the testes. Excretory genital ducts Excretory genital glands Seminal vesicles, Prostate & Cowper's glands** | **11** | |
| **Location of ovary, Oviduct, Uterus & Vagina** | **Location of ovary, Oviduct, Uterus & Vagina.** | **12** | |
| **Location of the (kidney & nephrone)** | **Location of the (kidney & nephrone)** | **13** | |
| **Location of the (Ureter, Bladder & Urethra)** | **Location of the (Ureter, Bladder & Urethra)** | **14** | |

**# Medical Physics- First year level/ second semester**

**Course number: 103051129**

**Theory credit hr/ week= 2**

**Lab credit hr/ week= 1**

|  |  |  |
| --- | --- | --- |
| **Laboratory Work** | **Theoretical Content** | **week** |
| Explain how to plot graph and make laboratory report. | General concepts: Method of physics and standards; thermodynamics system and system properties; conservation of energy principle; application of thermodynamics; the Zero law. | **1** |
| Optical Fiber Loss (bend) Measurement. | Pressure; temperature in medicine and temperature scales | **2** |
| Simple pendulum. | Equation of state; ideal gas and real gas; general law of gases. equilibrium and types of equilibrium; compressibility factor, coefficient of volume expansion | **3** |
| Spectral photometric | Heat and energy; work and mechanical forms of work; power; the 1st law of thermodynamics; Boyles and Charles law; practice exercises. | **4** |
| Density of liquid. | The 2nd law of thermodynamics; reversible and irreversible process; entropy and enthalpy. | **5** |
| The focal length of convex lens. | IR &Thermal therapy | **6** |
| Measurement of Viscosity of liquids. | Internal energy; heat capacity and adiabatic process; the relation between pressure, volume, and temperature in adiabatic process. | **7** |
| Ostwald´s Viscometer: find viscosity of unknown; find the molecular weight; find concentration of unknown substance. | Fundamental of physics: Kinetic theory of a gas; electromagnetic waves; physical optics. | **8** |
| Measuring surface tension (by capillary rise method and traveling microscope). | Radiation effects on human body. Heat transfer | **9** |
| Measuring surface tension (differential height capillary method). | U.V and IR effects; medical and biological effects of radiation; radiotherapy | **10** |
| Decay curve and half life. | Production of X-Ray and X-Ray spectra; absorption of X-Ray | **11** |
| Boyle’s Law. |  | **12** |
| Speed of sound. |  | **13** |
| Laser application for measurement of single slit. |  | **14** |

**# Human Rights- First year level/ second semester**

**Course number: 103051001**

**Theory credit hr/ week= 1**

**# Medical microbiology- Second year level/ First semester**

**Course number: 103052212**

**Theory credit hr/ week= 3**

**Lab credit hr/ week= 1**

|  |  |  |
| --- | --- | --- |
| **Laboratory Work** | **Theoretical Content** | **week** |
| Orientation to the laboratory. Rules of conduct and general safety.  Microscopic techniques. Bright-field light microscope. | History of microbiology &Importance of microbiology | **1** |
| Examination of stained microorganisms; Smear preparation and  simple staining; Gram staining | Anatomy of bacteria  Surface appendage, Capsule, Cell wall of  G.+ve & G –ve bacteria, Cytoplasmic membrane. | **2** |
| The hanging drop slide and bacterial motility; Acid-fast staining  procedure. | Bacterial physiology, Physical and chemical growth determinate,  growth and growth curves, bacterial reproduction. | **3** |
| Bacterial spores and endospores staining; Microbiological culture  media and sterilization; Methods of inoculation and isolation of pure culture | . Genetics, Definition, genetic, element, mutation **(spontaneous, gene**  **transfer, transformation, conjugation, and gene transduction)** | **4** |
| Action of dyes and antibiotics; Enzymes assays for some specific  microbial enzymes. | Recombinant DNA biotechnology. | **5** |
| Assays for specific metabolic activities; Acid and gas production  from: Carbohydrate fermentation; Triple sugar iron agar test;  IMVIC tests. | Sporulation and germination. | **6** |
| Systemic bacteriology: Staphylococci spp. | Sterilization: (chemical + physical Methods). | **7** |
| Streptococci species. | Chemotherapy | **8** |
| Salmonella species. | Morphology of Bacteria, Staining and Classification. | **9** |
| Shigella species. | Staphylococci species:  Streptococcus pyogenes; Streptococcus  pneumoniae. | **10** |
| Pseudomonas species. | Aerobic Spore-forming bacteria Bacillus species. ( B.anthracis, B.subtilis, B. ceseus). | **11** |
| Proteus species. | Clostridium perfringens; Clostridium tetani; Clostridium botuliun | **12** |
| Klebsiella species. | Corynebacterium diphtheria  Mycobacterium tuberculosis; M. leprae | **13** |
| Candida albicans. | Propionibacterium acnes, Listeria | **14** |
| Escherichia coli | Identification & classification of Gram negative bacteria, Chlamyadiae; Actinomycetes, Enterobacteriaceae: E. coli; Klebsiella spp.; Cilrobacte , Sertalia, | **15** |

**# Democracy- Second year level/ First semester**

**Course number: 103052002**

**Theory credit hr/ week= 1**

**# Medical Virology, Parasitology & Immunology- Second year level/ Second semester**

**Course number: 103052227**

**Theory credit hr/ week= 2**

**Lab credit hr/ week= 1**

|  |  |  |  |
| --- | --- | --- | --- |
| **Notes** | **Laboratory Work** | **Theoretical Content** | **week** |
|  |  |  | **1** |
| **Introduction to human parasite & taxonomy** | **Introduction, diagnostic samples in parasitic lab. taxonomy of parasite.** |  | **2** |
| **Protozoa, Entamoeba histolytica.** | **Fixed slide for all stage** | **The same as theory** | **3** |
| **Commensally intestinal amoeba.** | **=** | **=** | **4** |
| **Flagellate of the digestive tract. Flagellate of genital organs.** | **=** | **=** | **5** |
| **Blood& tissue flagellates** | **=** | **=** | **6** |
| **Sporozoa, Plasmodium spp.** | **=** | **=** | **7** |
| **Contin. & Toxoplasma gondii .** | **=** | **=** | **8** |
| **Helimenth, taxonomy, cestoda, Taenia spp. Hymenolepis spp.** | **=** | **=** | **9** |
| **Hydatid cyst.** | **=** | **=** | **10** |
| **Trematoda , Schistosoma spp.** | **=** | **=** | **11** |
| **Nematoda, Ascaris, Trichuris,** | **=** | **=** | **12** |
| **Entrobious, Ancylestoma.** | **=** | **=** | **13** |
| **Wuchereria bancrofti , Trichinella spiralis.** | **=** | **=** | **14** |
| **Free living amoeba (Naegleria –Acanthamoeba).** | **Show overhead slide & data show** |  | **15** |
| **Diagnostic methods in parasitic diseases in general.** | **Diagnostic sample, fresh stool, urine, blood film.** |  | **16** |
|  |  | **General introduction** **immunology** | **17** |
|  |  | **Innate &adaptive immunity** | **18** |
|  |  | **Antigen characteristics** | **19** |
|  |  | **B& T cells.** **Immune deficiency diseases,** | **20** |
|  |  | **complements , Auto immune diseases** | **21** |
|  |  | **Hypersensitivity types** | **22** |

**# Biochemistry I - third year level/ first semester**

**Course number: 103053314**

**Theory credit hr/ week=3**

**Lab credit hr/ week=1**

|  |  |  |
| --- | --- | --- |
| **Laboratory Work** | **Theoretical Content** | **week** |
| **General reaction of carbohydrate** | **Introduction to amino acid & protein** | **1** |
| **Effect of alkali on carbohydrate** | **Classification of amino acid** | **2** |
| **Iodine & ozazone test** | **Separation & purification** | **3** |
| **Unknown of carbohydrate** | **Physical properties/chemical reactions** | **4** |
| **Color reactions of proteins 1** | **Structure of proteins and bonds** | **5** |
| **Color reactions of proteins 2** | **Carbohydrate: mono & disaccharide** | **6** |
| **Precipitation of proteins** | **Polysaccharide, complex carbohydrate** | **7** |
| **Lipid solubility** | **Lipids, phospholipid** | **8** |
| **Acroline & iodine test** | **Steroid, lipid peroxidation** | **9** |
| **Determination of saponification** | **Hormones: synthesis of hormones** | **10** |
| **Saponification** | **Hormone action** | **11** |
|  | **Enzymes: specificity, catalysis** | **12** |
|  | **Enzyme kinetic, Inhibitors** | **13** |
|  | **Regulatory enzymes, kinetic of allosteric enzymes** | **14** |
|  | **Multi-substrate reaction, iso-enzymes** | **15** |
|  | **Fat soluble vitamins** | **16** |

**# Pathophysiology- third year level/ first semester**

**Course number: 103053315**

**Theory credit hr/ week=3**

**Lab credit hr/ week=1**

|  |  |  |
| --- | --- | --- |
| **Laboratory Work** | **Theoretical Content** | **week** |
| **General introduction and slide preparation** | **Introduction** | **1** |
| **Cell injury and degenerations** | **Cell injury and tissue response; Degeneration; Necrosis; Atrophy;**  **Hypertrophy; Metaplasia and Calcification; Inflammation and Repair.** | **2** |
| **Growth disturbances.** | **Disorders of electrolytes and water and acid–base balances: Hyper and**  **Hyponatremia; Hyper and Hypokalemia; Syndrome of inappropriate secretion of ADH; Diabetes Insipidus; Metabolic acidosis and alkalosis; Respiratory acidosis and alkalosis.** | **3** |
| **Inflammation.** | **Disorders of cardiovascular system: Hyperemia; Congestion and edema;**  **Thrombosis; embolism and infarction; Shock; Coronary heart disease and MI; Rheumatic heart disease; Heart failure; Acute pulmonary edema; Essential hypertension; Secondary hypertension; Malignant hypertension; Hypotension; Aneurysm versus varicose veins;** | **4** |
| **Thrombosis** | **Disorders of respiratory system: Pneumonias; Tuberculosis; Respiratory**  **Distress syndrome; Bronchial asthma; Emphysema and bronchiectasis; Cystic fibrosis; Pulmonary embolism; Pulmonary hypertension.** | **5** |
| **Neoplasia.** | **.** **Disorders of the renal system: Nephrotic syndrome; Glomerulonephritis;**  **Diabetic glomerulosclerosis; Hypertensive glomerular disease; Pyelonephritis; Drug related nephropathies; Acute renal failure; Chronic renal failure.** | **6** |
| **Disorders of respiratory system.** | **Disorders of GI and hepatobiliary systems: Peptic ulcer and Zollinger –**  **Ellison syndrome; Irritable bowel syndrome; Crohn's disease; Diarrhea; Celiac disease; Viral hepatitis; Primary biliary cirrhosis; Liver failure; Cholelithiasis.** | **7** |
| **Disorders of the cardiovascular system** | **Disorders of thyroid function: Hypothyroidism. Hyperthyroidism.**  **Graves’s disease. Thyrotoxicosis.** | **8** |
| **Disorders of renal system.** | **Disorders of adrenal function: Cushing syndrome. Adrenal cortical**  **Insufficiency (primary and secondary). Congenital adrenal hyperplasia. Pheochromocytoma.** | **9** |
| **Liver disorders.** | **Diabetes mellitus and metabolic syndrome; Dyslipoproteinemia.** | **10** |
| **Disorders of the gastrointestinal tract.** |  | **11** |
| **Disorders of the central nervous system.** |  | **12** |
| **Disorders of the reproductive system.** |  | **13** |
| **Disorders of skeletomuscular system.** |  | **14** |
| **Disorders of endocrine system.** |  | **15** |

**# Biochemistry II- third year level/ second semester**

**Course number: 103053329**

**Theory credit hr/ week=3**

**Lab credit hr/ week=1**

|  |  |  |
| --- | --- | --- |
| **Laboratory Work** | **Theoretical Content** | **week** |
| **General urine examination** | **Bio energetic compounds** | **1** |
| **Chemical test of urine 1** | **Glycolysis & citric acid cycle** | **2** |
| **Chemical test of urine 2** | **Glycogenesis, glycogenolysis** | **3** |
| **Unknown of urine** | **Pentose phosphate pathway** | **4** |
| **Estimation of glucose in CSF** | **Gluconeogenesis, glycosaminoglycan** | **5** |
| **Estimation of chloride in CSF** | **Bio-energetic, the role of ATP** | **6** |
| **Estimation of protein in CSF** | **Biosynthesis of fatty acid** | **7** |
| **Total serum Ca2+** | **Oxidation of fatty acid, ketogenesis** | **8** |
| **Inorganic phosphorus** | **Metabolism of phosphor-lipid** | **9** |
| **Total serum protein** | **Lipid transport and storage** | **10** |
|  | **Cholesterol biosynthesis** | **11** |
|  | **Nucleic acid structure** | **12** |
|  | **Purine & pyrimidine biosynthesis** | **13** |
|  | **DNA replication & repair** | **14** |
|  | **Catabolism of proteins & amino acid** | **15** |
|  | **Conversion of amino acid, biosynthesis of non-essential amino acid** | **16** |

**# Public Health& Immunology- Forth year level/first semester**

**Course number: 103054415**

**Theory credit hr/ week=2**

|  |  |
| --- | --- |
| **Theoretical Content** | **week** |
| **General items &ICD10** | **1** |
| **Predisposing factors of infectious diseases** | **2** |
| **Cardiovascular diseases**  growth and growth curves, bacterial reproduction. | **3** |
| **Gastrointestinal diseases** | **4** |
| **Skin diseases** | **5** |
| **Sexually transmitted diseases** | **6** |
| **Oncogenic diseases** | **7** |
| **Respiratory infections** | **8** |
| **Family planning include maternal infections, vaccination** | **9** |

**# Clinical chemistry- fifth year level/ first semester**

**Course number: 103055514**

**Theory credit hr/ week=3**

**Lab credit hr/ week=1**

|  |  |  |
| --- | --- | --- |
| **Laboratory Work** | **Theoretical Content** | **week** |
| **Blood specimen collection** | **Requesting laboratory tests** | **1** |
| **Blood glucose** | **Hyperglycemia** | **2** |
| **OGTT** | **Carbohydrate Metabolism** | **3** |
| **Blood urea** | **Diabetes Mellitus** | **4** |
| **Serum Creatinine** | **Hypoglycemia** | **5** |
| **Serum Uric acid** | **Dyslipidemia** | **6** |
| **Serum Bilirubin** | **Liver function Tests** | **7** |
| **Serum Phosphate** | **Liver function Tests** | **8** |
| **Serum Calcium** | **Liver function Tests** | **9** |
| **Serum cholesterol** | **Kidney function Tests** | **10** |
| **Serum Triglycerides** | **Kidney function Tests** | **11** |
| **Serum HDL** | **Diagnostic Enzymology** | **12** |
| **Serum AST** | **Diagnostic Enzymology** | **13** |
| **Serum ALT** | **Acid-Base Disorders** | **14** |
| **Serum ALP** | **Acid-Base Disorders** | **15** |

**# Clinical laboratory Training- fifth year level/ first semester**

**Course number: 103055515**

**Lab credit hr/ week=2**

|  |  |  |
| --- | --- | --- |
| **Laboratory Work** | **Theoretical Content** | **week** |
| **Diagnostic test basics, collecting &transporting specimens,**  **venipuncture, urine specimen, stool specimen.** | **-** | **1** |
| **Biochemical tests: Fasting blood glucose, Post-prandial glucose, Oral**  **glucose tolerance test.** | **-** | **2** |
| **Blood urea, Blood creatinine, Creatinine clearance, Uric acid** | **-** | **3** |
| **Cholesterol, Lipoproteins, triglycerides** | **-** | **4** |
| **Blood proteins, Bilirubin.** | **-** | **5** |
| **Calcium, Inorganic phosphate, Serum chloride** | **-** | **6** |
| **Alkaline phosphatase, Acid phosphatase, Alanine amiotransferase,**  **Aspartate aminotransferase, Lactate dehydrogenase, Creatine phosphokinase.** | **-** | **7** |
| **Serological tests: VDRL, ASO- Titer, Hepatitis tests.** | **-** | **8** |
| **C-reactive protein test, Rheumatic factor test, Rosebengal test, Typhoid**  **fever test( Widal test), Pregnancy Test.** | **-** | **9** |
| **General urine examination, urine specimen collection.** | **-** | **10** |
| **Hematological tests: RBC count, HB, PCV, RBC indices, WBC count,**  **Platelets count.** | **-** | **11** |
| **Blood typing, Coombs test, Bleeding time, ESR.** | **-** | **12** |
| **Microbiological tests: culture and sensitivity tests, Staining methods** | **-** | **13** |
| **Culture media, Enriched culture media for general use** | **-** | **14** |
| **Tests for identification of bacteria, Disk diffusion tests of sensitivity to antibiotics, Choice of drugs for disk test, bacterial disease and their laboratory diagnosis** | **-** | **15** |

**SWOT analysis for the curriculum of the department**

|  |  |  |
| --- | --- | --- |
| STRENGTHS(INTERNAL) | |  | | --- | | WEAKNESSES(INTERNAL) | |
| |  | | --- | | 1. Designed to meet both local needs and international standards.  2. Strong pharmaceutical science components. Availability of a good variety of general education subjects. | | 1-Central control of curriculum development by the sectorial committee in the ministry, and the possibility of changes in the curriculum only in a limited rate.  2- Lack of attention to give courses in English, especially in the scientific discussion within the classroom.  3-Lack of allocation enough credit hours to acquire good skills in hospital training programs that needed for health organization. |
| OPPORTINITIES (EXTERNAL) | THREATS (EXTERNAL) |
| 1- Emerging& new technologies.  2-learning and distance education. | Quality of incoming students (language, analytical thinking, motivation). |

**Chapter Seven**

**Scientific Research**

1 - Permanent development plan for scientific research in the branch of clinical sciences and linking them to see the needs of the college and the community.

2 - The active participation of the scientific research in the areas of medical sciences with pharmacy services.

***\*Graduate:***

Develop a plan public research branch to promote scientific research activities altogether depend on the actual needs of the surrounding community and keep pace with the most important scientific developments the world, and urged the scientific departments to adopt the five-year plans commensurate with the general plan of the college and a commitment to implement and update the research plan for the scientific departments every three years. The plan to link research faculty research plan for the university and the university linked to the goals and development plans and the needs of the community, and the needs of the college of new disciplines, also included the distance from the duplication and redundancy and benefit from previous studies. Clinical laboratory Sciences department update the curricula of postgraduate ( Higher diploma& Master degree) in 2013 due to less time for complete their research &project also to decrease the need of students for extension.

\*Adding two credits belonged special problem course for higher diploma& master syllabus in second semester.

\*Reduce the credits of lab training in second semester from three to two.

**\*The old schedule for higher diploma degree:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **First Semester** | **Credit (hr)** |  | **Second Semester** | **Credit(hr)** |
| Adv. Biochemistry l | 2 |  | Adv. Clinical Biochemistry l | 2 |
| Pathophysiology| | 2 |  | Hematology | 2 |
| Clinical Immunology l | 2 |  | Lab Training | 3 |
| Diagnostic microbiology l | 2 |  | Parasitology | 2 |
| Biostatistics | 2 |  | English | 1 |
| English | 1 |  | Seminar | 1 |
| **Total** | **11** |  | **Total** | **11** |
| **Total Credit for both two semesters=22** | | | | |

\*New

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **First Semester** | **Credit(hr)** |  | **Second Semester** | **Credit(hr)** |
| Adv. Biochemistry l | 2 |  | Adv. Clinical Biochemistry l | 2 |
| Pathophysiology l | 2 |  | Hematology | 2 |
| Clinical Immunology l | 2 |  | Lab Training | 2 |
| Diagnostic microbiology l | 2 |  | Parasitology | 2 |
| Biostatistics | 2 |  | English | 1 |
| English | 1 |  | Special problem | 2 |
|  |  |  | Seminar | 1 |
| **Total** | **11** |  | **Total** | **12** |
| **Total Credit for both two semesters=23** | | | | |

**\*Old Master degree schedule**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **First Semester** | **Credit(hr)** |  | **Second Semester** | **Credit(hr)** |
| Adv. Biochemistry ll | 2 |  | Adv. Clinical Biochemistry | 2 |
| Pathophysiology ll | 3 |  | Lab Training | 3 |
| Adv. Biopharmaceutics l | 2 |  | Clinical Immunology ll | 2 |
| Molecular Pharmacology l | 2 |  | Diagnostic microbiology | 2 |
| Biostatistics | 2 |  | Seminar | 1 |
| English | 1 |  | English | 1 |
| **Total** | **12** |  | **Total** | **11** |
| **Total Credit for both two =23** | | | | |

\*New:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **First Semester** | **Credit (hr)** |  | **Second Semester** | **Credit(hr)** |
| Adv. Biochemistry ll | 2 |  | Adv. Clinical Biochemistry | 2 |
| Pathophysiology ll | 3 |  | Lab Training | 2 |
| Adv. Biopharmaceutics l | 2 |  | Clinical Immunology ll | 2 |
| Molecular Pharmacology l | 2 |  | Diagnostic microbiology | 2 |
| Biostatistics | 2 |  | Special problem | 2 |
| English | 1 |  | English | 1 |
|  |  |  | Seminar | 1 |
| **Total** | **12** |  | **Total** | **12** |
| **Total Credit for both two semesters=24** | | | | |

**\*The number of postgraduate students in clinical laboratory sciences department at last four years as in this schedule:**

|  |  |  |  |
| --- | --- | --- | --- |
| PhD | Master | Higher diploma | Years |
| 1 | 5 | ------ | **2010-2011** |
| 1 | 6 | ------ | **2011-2012** |
| 2 | 7 | 3 | **2012-2013** |
| 2 | 2 | 4 | **2013-2014** |
| ------- | ------ | 3 | **2014-2015** |
| …… | 1 | 4 | **2015-2016** |
| 2 | 1 | - | **2016-2017** |
| --- | 1 | 1 | **2017-2018** |

The End