**Course Description Form**

|  |
| --- |
| 1. Course Name:
 |
| Clinical laboratory training |
| 1. Course Code:
 |
| 561 ClCL |
| 1. Semester / Year
 |
|  First and Second / Fifth  |
| 1. Description Preparation Date:
 |
|  29/2/2024 |
| 1. Available Attendance Forms:
 |
|  In-person attendance  |
| 1. Number of Credit Hours (Total) / Number of Units (Total)
 |
|  4/2 |
| 1. Course administrator's name (mention all, if more than one name)
 |
|  Name: Prof. Dr. Shatha Hussein Ali Email: shathahali@copharm.uobaghdad.edu.iq  Name: Assist. Prof. Dr. Ali Abdulhussain Kasim Email: ali.qasem@copharm.uobaghdad.edu.iq In association with the members of the Clinical Laboratory Sciences Department |
| 1. Course Objectives
 |
| **Course Objectives** | * Providing students with the necessary technical skills and principles of laboratory tests in the field of clinical biochemistry, serology, hematology, and microbiology.
* Illustrating the range of applications as well as limitations of different laboratory techniques.
* Relating the laboratory findings to the process of clinical diagnosis and management.
 |
| 1. Teaching and Learning Strategies
 |
| **Strategy** | * Laboratory practical training
* Discussions
* Reports
 |
| 1. Course Structure
 |
|

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Week | Hours | Required Learning Outcomes | Unit | Learning method | Evaluation method |
| 1 and 2 | 8 | Specimen collection; Description of the microscopical morphological and histological appearance; Antigen detection immu-nefluorescence, ELISA, and Molecular techniques;Indirect diagnosis of viral diseases (Cell Culture- cytopathic effect, Eggs pocks on CAM, Animals disease or death confirmation by neutralization test); Serological diagnostic procedures;Demonstrating the advantages and limitations of the aforementioned techniques; Interpretation of the results that aids in diagnosis. | Virology  | Training in relevant labs, Lectures,Discussions, and Reports | Practical skills,Exams, Classroom activities |
| 3-5 | 12 | Identifying and quantifying a variety of biochemical molecules in blood and body fluids using various analytical techniques. This includes Fasting blood glucose, Post-prandial glucose, Oral glucose tolerance test, Blood urea, Blood creatinine, Creatinine clearance, Uric acid, Cholesterol, Lipoproteins, triglycerides, Blood proteins, Bilirubin, Alkaline phosphatase, Acid phosphatase, Alanine aminotransferase, Aspartate aminotransferase, Lactate dehydrogenase, Creatine phosphokinase. | Biochemical investigations | = | = |
| 6 and 7 | 8 | Measurement of the main components of blood including; white blood cells total and differential count, red blood cells count, packed cell volume, hemoglobin level, mean corpuscular volume, mean corpuscular hemoglobin, reticulocyte percent.Assessment of iron status including iron concentration, transferrin level and total iron binding capacity. Measurement of erythrocyte sedimentation rate.Identifying the ABO blood grouping, cross matching of blood samples, and Coombs test. | Hematology  | = | = |
| 8 and 9 | 8 | Samples collection, handling and transport.Types of culture media and Antibiotic sensitivity test.Stained preparations of the micro-organisms.Relating the lab. findings to the clinical diagnosis of bacterial diseases. | Bacteriology  | = | = |
| 10 and 11 | 8 | Study the following characteristics of urine:The physical characteristics: like color, appearance, odor, PH, volume and specific gravity. The chemical tests: include protein, glucose, and ketons.The microscopic examination of urine sediments: which include RBCs, WBCs, casts and crystals. | General urine examination | = | = |
| 12 and 13 | 8 | Describing the principle of serological tests with special emphasis on the tests used for the diagnosis of the following: Sexually transmitted diseases, Hepatitis;Rheumatoloical markers;Typhoid fever and Brucellosis; and Pregnancy test. | Serology  | = | = |
| 14 and 15 | 8 | Demonstrating the applications of enzyme-linked immunosorbent assay (ELISA) and polymerase chain reaction (PCR) and their potentials in clinical diagnosis | Biotechnology and advanced techniques | = | = |

 |
| 1. Course Evaluation
 |
| Quizzes, practical work, and activities 40 marksFinal examination 60 marks  |
| 1. Learning and Teaching Resources
 |
| Required textbooks (curricular books, if any) | Laboratory training booklet (prepared by members of the clinical laboratory science department) |
| Main references (sources) |  |
| Recommended books and references (scientific journals, reports...) | - Henry's Clinical Diagnosis and Management by Laboratory Methods. 24th ed.; 2021.- Clinical Laboratory Methods: Atlas of Commonly Performed Tests. 2022. |
| Electronic References, Websites |  |