Module (Course Syllabus) Catalogue

2023-2024

College/ Institute	**Erbil Technical Health and Medical College**	
Department	**Medical Laboratory Technology**	
Module Name	**Clinical Bacteriology**	
Module Code	**CBA703**	
Degree	**Technical Diploma** [ ] **Bachelor** [*] **High Diploma** [ ] **Master** [ ] **PhD** [ ]	
Semester	**7**	
Qualification		
Scientific Title		
ECTS (Credits)	**6**	
Module type	**Prerequisite** [ ] **Core** [*] **Assist.** [ ]	
Weekly hours		
Weekly hours (Theory)	**(2)hr Class**	**( )Total hrs Workload**
Weekly hours (Practical)	**(2)hr Class**	**( )Total hrs Workload**
Number of Weeks	**12**	
Lecturer (Theory)	**Assist. Prof. Dr. Sanaria Fawzi Jarjes**	
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Lecturer (Practical)	**Assist. Prof. Dr. Sanaria Fawzi Jarjes**	
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Websites		

Course Book

Course Description	This course, which consists of (2) hours theoretical lecture & (2) hours clinical laboratory practices per week, provides an overview of infection and infectious process, clinically important bacterial species, their collection, detection and diagnosis of infection. As well as, in-depth studies of the infectious bacteria of selected organ systems will be conducted. Practical sessions will endeavor to provide the student with the most comprehensive experiences on laboratory diagnostic methodologies in order to diagnose the etiological agents of infection, with the emphasis on the case studies that simulate 'real life' medical situations.
Course objectives	This course is prepared to provide a comprehensive understanding about the clinically significant bacterial species and the routine identification methods used in medical laboratories. As well as the principles behind antibacterial chemotherapies.
Student's obligation	The role of students and their obligations throughout the academic year are: • Preparing for class (attendance, quizzes, reports, seminars and exams). • Willing to work hard to complete course activities. • Willing to bring their life experiences into the class to enrich discussions. • Matching deadlines for submitting their reports and assignments.
Required Learning Materials	

Evaluation

	Task	Weight (Marks)	Due Week	Relevant Learning Outcome
	Paper Review			
Assignments	Homework	**5%**		
	Class Activity	**2%**		
	Report	**10%**		
	Seminar			
	Essay			
	Project			

	Quiz	**8%**		
	Lab. Reports & activity	**10%**		
	Midterm Exam	**25%**		
	Final Exam	**40%**		
	Total	**100%**		

Specific learning outcome:	At the conclusion of this course the student should be able to demonstrate the following outcomes: 1. Recognize the purpose and the role of clinical bacteriology. 2. Explain the importance of universal precautions in the clinical laboratory setting. 3. List the significant normal human indigenous microbiom. 4. Organize a microorganism identification system. 5. Relate the processes involved in infection and how nosocomial infections are acquired. 6. Describe the nature and activity of antibacterial agents (antibiotics) in general use, their mechanisms of action, and their mechanisms of resistance. 7. Discuss the laboratory principles for testing antibiotic activity. 8. describe the causative bacterial pathogens, pathogenesis, epidemiology, clinical signs and lab. diagnosis of diseases affecting the urinary tract, the gastrointestinal tract, the respiratory tract, the wounds, sexually transmitted infections, the sterile body fluids and anaerobic infections. 9. Identify clinically significant microorganisms noted in clinical microbiology laboratories. 10. Establish a differential diagnosis based on a clinical case presentation.
Course References:	1. Jawetz, Melnick & Adelberg's Medical Microbiology. (2019). 28th ed., Mc Graw Hill Medical. 2. MURRAY, P.R. (2018). Basic Medical Microbiology. Elsevier. 3. Kamel,F. And Jarjes,S. (2015). Essentials of Bacteriology and Immunology. 4. Greenwood, D.; Slack, R.; Peutherer, J. and Barer, M. (2007). Medical Microbiology, 17th ed.,Elsevier.

Course topics (Theory)	Week	Learning Outcome
General introduction to clinical bacteriology & Syllabus Review: Discuss the purpose and the role of clinical bacteriology	1	1
Microbial Interactions with Human, Normal microbial flora of human body and its role	2	3
Infection and the Infectious process Mode of transmission and routes of infection	3	5
Mechanisms of Pathogenicity : general attributes and virulence factors of bacteria causing infections	4	5
Antibacterial agents: mode of activity for major antibiotic classes and Antibiotic resistance.	5	6
Anaerobic infections	6	6,7
Nosocomial and health care- associated infections	7	5,6
S7-Mid Term Exam	8	1,3,5,6,7
Bacterial pathogens commonly associated with urinary tract infections.	9	8,9
Bacterial pathogens commonly associated with lower respiratory tract infections	10	8,9
Bacterial pathogens commonly associated with lower GI tract infections	11	8,9
Bacterial pathogens commonly associated with wound/abscess infections	12	8,9
Bacterial pathogens commonly associated with sterile body fluid infections	13	8,9
Bacterial pathogens commonly associated with sexually transmitted infections	14	8,9
S7-Final Exam- Preparation (First trial)	15	1,3,5,6,7,8,9
S7-Final Exam	16	1,3,5,6,7,8,9
Practical Topics	**Week**	**Learning Outcome**
Universal precautions in the clinical laboratory	1	2
Bacterial identification systems/ Phenotypic identification method	2	4

Bacterial isolation methods	3	4
Selection of routine primary culture media and media for unusual fastidious bacteria.	4	4
Biochemical dependent methods for identification of bacterial species- API Kits	5	4,9
Case Study #1	6	8,9,10
Case Study #2	7	8,9,10
S7-Mid Term Exam	8	2,4,8,9,10
Laboratory protocols for anaerobic bacteria.	9	4,9
Biochemical dependent methods for identification of bacterial species- Vitek 2 system	10	4,9
Antibiotic susceptibility testing methods	11	7
Case Study #3	12	8,9,10
Case Study #4	13	8,9,10
Automated blood culture	14	4,9
S7-Final Exam- Preparation (First trial)	15	2,4,7,8,9,10
S7-Final Exam	16	2,4,7,8,9,10

Questions Example Design

1. Multiple choices
2. Compositional questions:
   - What ?
   - How ?
   - Why ?
3. Open-end: Fill in the blanks
4. Enumeration
5. True and false: Answer True (T) or False (F) about each of the following statements & correct the false statements

Extra notes:

External Evaluator