



Jordan University of Science and Technology
Faculty of Applied Medical Sciences
Department of Medical Laboratory Sciences
Clinical Microscopy (LM 463) Course Syllabus

Course Information	
Course Title	Clinical Microscopy (Theory and Practical) – 2 Credit Hours
Course Code	LM463
Prerequisites	LM362 (LM261)
Course Website	www.just.edu.jo
Instructor	Dr. Muhamad Shakhathreh
Office Location	M5-Level 1 : Faculty of Applied Medical Sciences
Office Phone #	23874
Office Hours	TBA
E-mail	mkshakhathreh@just.edu.jo
Teaching Assistant(s)	Mr. Ra'ed Obeidat
Course Description	
<p>This course provides theoretical and practical applications of microscopic techniques in the analysis and examination of urine, stool, cerebrospinal fluid (CSF), seminal fluid, synovial fluid, pleural, and peritoneal fluid. The course will cover the principles and techniques of clinical microscopy. Students will perform the pregnancy test and practice the examination of urine, stool, cerebrospinal fluid, sputum, seminal fluid, and synovial fluid, as performed in the clinical microscopy laboratory setting with emphasis on technical performance. This course includes theory, practical application, and technical performance of procedures used in the analysis of urine and other body fluids.</p>	

Textbook	
Title	Fundamental of Urine and body fluid analysis
Author(s)	Nancy A.Brunzel
Publisher	Saunders Co.
Year	2004
Edition	Second edition.
Book Website	
Other references	Clinical diagnosis and management by laboratory methods (Todd, Sanford, Davidson; 17th, 18th, or 19th edition.) Urinalysis and body fluids (Strasinger, Susan king, 2008, 5th ed.) Laboratory manuals, Internet resources.

Assessment		
Assessment	Expected Due Date	Percentage
Mid-term exam	Seventh week	30%
Practical midterm Exam	Eighth week	15%
Final Exam (theoretical and practical)	Assigned by registration department	40%
Assignments	Quizzes and evaluations.	15%
Participation	-	
Attendance	Mandatory for lectures and labs. Not less than 90%	

Course Objectives	Percentage
1. To teach the Medical Laboratory Sciences students the proper collection methods of samples for clinical microscopy analysis.	10%
2. To teach the Medical Laboratory Sciences student the inspection of the clinical samples, and safety of sample processing and handling.	10%
3. To teach Medical Laboratory Sciences student macroscopic and microscopic analysis of body fluid specimens and interpretation of results.	50%
4. To correlate results with clinical diagnosis and interfering factors.	20%
5. To teach Medical Laboratory Sciences students principles of quality control in clinical diagnostic laboratories.	10%

Teaching & Learning Methods
PowerPoint lectures , discussions, laboratory experiments , unknowns
Teaching duration: 16 weeks: 16 lectures (50 min) and 16 Laboratory sessions

Learning Outcomes: Upon successful completion of this course, students will be able:	
1. To describe and focus on the selection and collection criteria of the clinical specimen.	Handouts
2. To know the component of microscope, functions, and maintenance.	Handouts
3. To become familiar with how to use the haemocytometer and counting of cells in different body fluids.	Handouts
4. To characterize urine macroscopically, microscopically, and chemically.	Handouts
5. To characterize CSF, stool, synovial fluid chemically, macroscopically, and microscopically.	Handouts

6. To interpret the results and correlate it with clinical disease, and interfering substances.	Handouts
---	----------

Useful Resources
Jordan University of Science and Technology library.
Internet search: Body fluid analysis teaching resources.

Course Content		
Week	Topics	Chapters in the book
1	Introduction to course	
2	Use and care of the microscope.	1 Handout
3	Use of haemocytometer in microscopic analysis.	Handout
4, 5, 6	Urine examinations.	3, 6, 7, 8 Handout
7	CSF examination.	13 Handout
8	Stool examination.	10 Handout
9	Sputum examination.	Handout
10	Theoretical mid-term exam.	-
11	Practical mid-term exam.	-
12	Seminal fluid examination	11 Handout
13	Synovial fluid examination.	14 Handout
14	Practical pleural fluid, peritoneal fluid, and pericardial fluid examination.	15 Handout
15	Final practical exam	
16	Final theoretical exam	

Lab. Content		
Week	Topics	Chapters in the book
1	Introduction to the lab	
2	Use and care of the microscope.	1 Handout
3	Use of hemocytometer in microscopic analysis.	Handout
4, 5, 6	Practical urine examinations.	3, 6, 7, 8 Handout

7	Practical CSF examination.	13 Handout
8	Practical stool examination.	10 Handout
9	Practical sputum examination.	Handout
10	Practical mid-term exam	
11	Block Week – No Lab	Handout
12	Practical seminal fluid examination	11 Handout
13	Practical synovial fluid examination.	14 Handout
14	Practical pleural fluid, peritoneal fluid, pericardial fluid examination.	Handout
15	Final practical exam	
16	Final theoretical exam	

Additional Notes	
<p>Attendance policy: Mandatory for all of the lectures and labs.</p> <p>Expected workload: Students are expected to attend all classes, laboratory sessions, and pass the exams.</p> <p>Feedback: Feedback or concerns from the students regarding the course and the material covered in the lecture can be discussed with the instructor (Dr. Muhamad Shakhathreh) at any time.</p>	

Course Content		
Week	Title of the Lecture	Lecturer
1	Introduction to course	Dr. Muhamad Shakhathreh
2	Use and care of the microscope.	Dr. Muhamad Shakhathreh
3	Use of haemocytometer in microscopic analysis.	Dr. Muhamad Shakhathreh
4	Eid- al - Adha holiday	
5	Practical urine examination- 1.	Dr. Muhamad Shakhathreh
6	Practical urine examination- 2.	Dr. Muhamad Shakhathreh
7	Practical urine examination-3.	Dr. Muhamad Shakhathreh
8	Practical CSF examination.	Dr. Muhamad Shakhathreh
9	Practical stool examination.	Dr. Muhamad Shakhathreh
10	Practical sputum examination.	Dr. Muhamad Shakhathreh
11	Mid-term exams	

12	Practical seminal fluid examination.	Dr. Muhamad Shakhathreh
13	Practical synovial fluid examination.	Dr. Muhamad Shakhathreh
14	Practical pleural fluid, peritoneal fluid, pericardial fluid examination.	Dr. Muhamad Shakhathreh
15	Final practical exam	
16	Final theoretical exam	