



Course Detailed Description – Procedures of the Course Plan Committee /Faculty of Pharmacy

QF02/0408–1.0

Department	Pharmacy
------------	----------

<b>Course Name</b>	Pharmaceutical Microbiology Lab	<b>Course No.</b>	0201332
Prerequisite	Biology Lab	Credit Hours	1
Number & date of course plan approval	2013	Brief Description	See form QF02/0409

<b>Intended Learning Outcomes</b>	By the end of this course, the student will be able to identify microorganisms, measuring the efficacy and potency of different antimicrobial agents, using different sterilization methods and designing optimum sterilization cycles and monitoring microbiological quality for both sterile and non-sterile dosage forms.		
<b>Course Topics</b>	This course is intended to teach the students the practice of microbiology including laboratory safety, handling and identification of microorganisms, antibiotic assays and evaluation of antiseptics and disinfectants, and the various methods of sterilization.		
<b>Text Books</b>	1. Cappuccino, J.G. and Sherman, N. (2005) "Microbiology- A Laboratory Manual" 7 <sup>th</sup> ed. Pearson Education, Inc., Publishing as Benjamin Cumming, San Francisco, CA 94111, USA		
<b>References</b>	1. Primrose S.B. and Wardlaw A.C. (2004) Sourcebook of Experiments for the Teaching of Microbiology 5th ed., Academic Press, London.		
<b>Grade Determination</b>	1 <sup>st</sup> Exam = 25% 2 <sup>nd</sup> Exam = 25% Final Exam = 50%	<b>Practical Course Grade Determination</b>	Course Work = 50% (Reports, Term Papers, Quizes) Final Exam = 50%



### Course Outline

Week	Hours	Subjects	Chapter s in Textboo k	No tes
1		<ul style="list-style-type: none"> <li>Laboratory safety and laboratory protocol</li> <li>Aseptic techniques and subculturing of bacterial cultures</li> </ul>	1 <sup>ST</sup>	
2		<ul style="list-style-type: none"> <li>Sources of microbial contamination (air, water, respiratory tract, hair, throat, hands, dust)</li> </ul>	2 <sup>nd</sup>	
3		<ul style="list-style-type: none"> <li>Techniques for isolation of pure cultures</li> <li>Cultural characteristics of microorganisms</li> </ul>	3 <sup>th</sup>	
4		<ul style="list-style-type: none"> <li>Microscopy</li> <li>Preparation of bacterial smears</li> <li>Simple staining</li> </ul>	4 <sup>th</sup>	
5		<ul style="list-style-type: none"> <li>Differential staining of bacterial cell structure</li> <li>Gram stain</li> <li>Acid-fast staining</li> <li>Spore and capsule stain</li> </ul>	5 <sup>th</sup>	
6		<ul style="list-style-type: none"> <li>Media for routine cultivation of bacteria</li> <li>Differential and selective media (MacConkey agar, Mannitol-salt agar, EMB Agar)</li> <li>Enrichment media (Blood agar, types of hemolysis, alpha, beta, and gamma)</li> </ul>	6 <sup>th</sup>	
7		<ul style="list-style-type: none"> <li>Disinfectants and antiseptics</li> <li>Agar plate-sensitivity method</li> </ul>	7 <sup>th</sup>	
8		<ul style="list-style-type: none"> <li>Chemotherapeutic agents</li> <li>The Kirby-Bauer antibiotic susceptibility test procedure</li> </ul>	8 <sup>th</sup>	
9		<ul style="list-style-type: none"> <li>Determination of minimal inhibitory concentration (MIC) by broth dilution method</li> </ul>	9 <sup>th</sup>	
10		<ul style="list-style-type: none"> <li>Determination of minimal bactericidal concentration (MBC) by agar method</li> </ul>	10 <sup>th</sup>	
11		<ul style="list-style-type: none"> <li>Phenol coefficient</li> <li>Evaluation of antiseptic and disinfectant activity</li> </ul>	11 <sup>th</sup>	<b>P</b>



Course Detailed Description – Procedures of the Course Plan Committee /Faculty of Pharmacy

QF02/0408–1.0

Week	Hours	Subjects	Chapter s in Textboo k	No tes
12		<ul style="list-style-type: none"> <li>• The fungi</li> <li>• Cultural characteristics of yeasts and molds</li> <li>• Slide preparation by Scotch tape method</li> <li>• Lactophenol cotton blue staining procedure</li> <li>• <i>Penicillium</i> , <i>Aspergillus</i>, and <i>Candida</i></li> </ul>	12 <sup>th</sup>	
13		<ul style="list-style-type: none"> <li>• Parasitic protozoa</li> <li>• Intestinal , luminal, blood and tissue protozoa</li> </ul>	13 <sup>th</sup>	
14		<ul style="list-style-type: none"> <li>• The efficiency of methods of sterilization</li> <li>• Effect of moist heat (autoclaving)</li> <li>• Effect of ultraviolet light</li> </ul>	14 <sup>th</sup>	
15			15 <sup>th</sup>	

Approved by Dept. Chair		Date of Approval	
----------------------------	--	---------------------	--

**Extra Information:** (Updated every semester and filled by course instructor)

<b>Course Instructor</b>	Dr. Wafa Jasim Al-rajab
<b>Office No.</b>	315
<b>Extension Email</b>	272 awfa.alrajab@yahoo.com
<b>Office hours</b>	