Course Detailed Description – Procedures of the Course Plan Committee /Faculty of Pharmacy	QF02/0408-2.1E

Department	Pharmacy

Course Name	Pharmaceutical Microbiology 2	Course No.	0201237
Prerequisite	Pharmaceutical Microbiology 1	Credit Hours	2
Number & date of course plan approval	2016/2017	Brief Description	See form QF02/0409

Course Objective	The students should learn the methodologies of sterilization and disinfection and how microorganisms spoil pharmaceutical products. The principles of sterility testing and pharmaceutical quality assurance.		
Intended Learning Outcomes	The course is intended to provide the student with: 1. The concept of sterilization, disinfection, antisepsis and preservation. 2. The different chemical and physical methods used to control microbial contamination. 3. The methods used for the evaluation of antimicrobial efficacy and factors affecting it. 4. The methods of sterility testing 5. The manufacturing of antibiotics		
Course Topics	1. Disinfectants and preservatives 2. Sterilization techniques 3. Sterility testing 4. Manufacturing of antibiotics		
Text Books	Hugo, W.B and Russell, A.D.(2011); Pharmaceutical Microbiology, 7th ed. Blackwell Science, UK		
References	1. Winfield, A.J. and Richards, R.M.E. ed. (2009) Pharmaceutical practice 3rd. ed. Churchill Livingstone, U.K. 2. Black, J.G. (2015); Microbiology, Principles and explorations. 9th ed. John Wiley Publication, USA. (Latest edition). 3 Prescott, L.M., Harley, J.P., and Klein, D.A.(2008); Microbiology, 7th ed. McGraw Hill, USA		
Grade Determination	1st Exam = 25% 2nd Exam = 25% Final Exam = 50%	Practical Course Grade Determination	Course Work = 50% (Reports, Term Papers, Quizes) Final Exam = 50%

Course Outline				
Week	**Hours**	**Subjects**	**Chapters in Textbook**	**Notes**
1	2	Microbial spoilage of pharmaceutical products Preservation of medicines using antimicrobial agents.	17	
2	2	Quality assurance and the control of microbial risk in medicines	17	
3	2	Chemical disinfectants, antiseptics and preservatives	19	
4	2	Factors affecting choice of antimicrobial agent, Types of compounds and disinfection policies	19	
5	2	Contamination of non-sterile pharmaceuticals in hospital and community environments: significance of microbial contamination, source of contamination, factors determining the Outcome of a medicament-borne infection, prevention of contamination		
6	2	Non-antibiotic antimicrobial agents: mode of action and resistance	20	
7	2	Non-antibiotic antimicrobial agents: mode of action and resistance	20	
8	2	Principles and practice of sterilization: Sensitivity of microorganisms, sterilization methods, heat, gaseous, Radiation and filtration sterilization	Chapter 12 Ref. 1	
9	2	Sterility testing: Sterility test conditions, growth promotion test, Validation test,	Chapter14 Ref. No.1	
10	2	Sterility testing and sterility assurance	21	
11	2	Sterile pharmaceutical products	22	
12	2	Sterile pharmaceutical products	22	
13	2	Pyrogens: nature of endotoxins, depyrogenation	Chapter14 Ref. No.1	
14	2	Principles of good manufacturing practice	23	
15	2	Manufacture of antibiotics: production of benzypenicillin, Production of cephalosporin	26	
16	2	The manufacture and quality control of immunological products	26	

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Approved by Dept. Chair		Date of Approval	

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

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