



T-104
2022

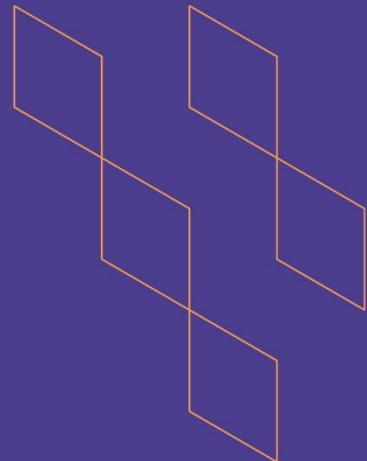
Course Specification





T-104
2022

Course Specification



Course Title	Pharmaceutical Microbiology-1
Course Code:	232-PHU-3
Program:	Pharmaceutical Sciences
Department:	Pharmaceutics
College:	Pharmacy
Institution:	Najran University
Version:	١
Last Revision Date:	22/12/2023



Table of Contents:

Content	Page
A. General Information about the course	3
1. Teaching mode (mark all that apply)	3
2. Contact Hours (based on the academic semester)	3
B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods	4
C. Course Content	5
D. Student Assessment Activities	6
E. Learning Resources and Facilities	6
1. References and Learning Resources	6
2. Required Facilities and Equipment	6
F. Assessment of Course Quality	7
G. Specification Approval Data	7

A. General information about the course:

Course Identification	
1. Credit hours:	3 (2+1)
2. Course type	
a. University <input type="checkbox"/>	College <input checked="" type="checkbox"/> Department <input type="checkbox"/> Track <input type="checkbox"/> Others <input type="checkbox"/>
b. Required <input checked="" type="checkbox"/>	Elective <input type="checkbox"/>
3. Level/year at which this course is offered: 4 th Level/ 2 nd year	
4. Course general Description	
Topics of this course cover the fundamentals of bacteria, viruses, fungi, and parasites regarding their structure, classification, and genetics of medically important pathogens. In addition, the course includes enumeration of preventive and control measures of infectious diseases by sterilization, disinfection and antiseptics with special concern on antimicrobial, antiviral and antifungal agents.	
5. Pre-requirements for this course (if any): NA	
6. Co- requirements for this course (if any): NA	
7. Course Main Objective(s)	
<ol style="list-style-type: none"> Students will gain the basic knowledge about medically important pathogenic microorganisms (Bacteria, Viruses, Fungi and Parasites) regarding their structure, physiology, genetics and virulence factors. Student will gain an understanding about various antimicrobial (antibacterial, antiviral, antifungal and antiparasitic) agents, their mechanisms of action, microbial resistance and the appropriate methods for choice antimicrobial agents. Student will know the diverse methods of sterilization and disinfection and perform microbiology laboratory safety and rules. Student will diagnose the different microbial infection in microbiology laboratory. 	

1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	60	100
2.	E-learning		
3.	Hybrid <ul style="list-style-type: none"> Traditional classroom E-learning 		
4.	Distance learning		

2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	30
2.	Laboratory/Studio	30
3.	Field	0



4.	Tutorial	0
5.	Others (specify)	0
	Total	60

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Demonstrate the concepts and knowledge related to microorganisms and their characteristics	K1	Lectures	Theoretical Exam Assignments
1.2	Demonstrate the understanding related to identification of microorganisms	K3	Lectures	Theoretical exam, Assignment
2.0	Skills			
2.1	Demonstrate ability to identify the microorganisms through staining and microscopy	S3	Lectures, Lab work, Group discussion	Theoretical exam, Practical Exam
3.0	Values, autonomy, and responsibility			
3.1	Demonstrate ability to confidence and independent thinking	V4	Problem-based learning	Practical Exam Lab reports Observation cards





C. Course Content

No	List of Topics	Contact Hours
1.	Introduction to Microbiology	3
2.	Bacterial structure, physiology, and metabolism	3
3.	Bacterial genetics	3
4.	Antimicrobial agents	3
5.	Sterilization and disinfection	3
6.	General properties of viruses	3
7.	Antiviral agents	3
8.	General properties of fungi	2
9.	Antifungal drugs	3
10.	Introduction to parasitology	3
11.	Appropriate therapy for parasitic diseases	1
	Total	30
List of Practical Topics		
1.	Introduction and study of different equipment and processing, e.g., B.O.D. incubator, laminar flow, aseptic hood, autoclave, hot air sterilizer, deep freezer, refrigerator, microscopes used in experimental microbiology.	4
2.	Preparation, filling and sterilization of nutrient broth and agar medium	2
3.	Preparation and fixing a smear for staining	2
4.	Staining methods- Simple, Grams staining and acid-fast staining	4
5.	Cultivation of microbes in a liquid nutrient medium and on a solidified medium by streak-plate method	4
6.	To estimate the number of colonies forming units of given bacterial sample	4
7.	Antibiotic sensitivity testing	2
8.	Sterilization of glassware, preparation and sterilization of media.	4
9.	REVISION	4
Total		30



D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Quiz	4-5	10%
2.	Midterm Exam	7-9	20%
3.	Assignments	15	5%
...	Observation card	15	5%
	Practical Quiz + notebook	12-15	10%
	Practical Exam	16	10%
	Final Exam	17-19	40%
	Total	19	100%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	1. Medical Microbiology, Jawetz, Melnick and Adelberg's. Latest edition. 2. General Microbiology 7th edition Hans G. Schlege
Supportive References	3. Medical Microbiology, Jawetz, Melnick and Adelberg's. Latest edition. 4. General Microbiology 7th edition Hans G. Schlege.
Electronic Materials	5. https://sdl.edu.sa/SDLPortal/en/Publishers.aspx 6. http://dlaf.nu.edu.sa/en/e-libraries 7. http://www.nu.edu.sa/en/web/deanship-of-libraries-affairs/85 8. http://lib.nu.edu.sa/DigitalLibrary.aspx 9. https://www.journals.elsevier.com/international-journal-of-pharmaceutics/ 10. https://www.journals.elsevier.com/colloids-and-surfaces-b-biointerfaces
Other Learning Materials	11. Computer-based programs/CD, professional standards or regulations and software.

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Suitable lecture room equipped with data show and internet access Suitable labs equipped with health and safety tools.
Technology equipment (projector, smart board, software)	Computer Internet access Data show

Items	Resources
Other equipment (depending on the nature of the specialty)	Computer Internet access Data show

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Indirect
Effectiveness of students assessment	Examination committee	Direct
Quality of learning resources	Course coordinator and students	Indirect
The extent to which CLOs have been achieved	Course coordinator	Direct
Other		

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	PHARMACEUTICS DEPARTMENT COMMITTEE
REFERENCE NO.	DEPARTMENT MEETING NO. 13
DATE	25/12/2023