Course Syllabus

Code - Course Title	**ECZ124 - Pharmaceutical Microbiology II**
Course Type	II. SEMESTER
Laboratory + Practice	4+1
ECTS	**5.0**
Language of Instruction	Türkçe
Course Type	Required Courses
Course Instructor(s)	PROF. DR. MİRİŞ DİKMEN, DOÇ. DR. MUSTAFA ESER

Mode of Delivery	The mode of delivery of this course is Face to face.
Prerequisites	There is no prerequisite or co-requisite for this course.
Courses Recomended	There is no recommended optional programme component for this course.
Work Placement	It continues with the laboratory course.

Course Syllabus

Weeks	Learning Outcomes	Topics	Teaching Methods
Week - 1		Microbial Isolation Diagnosis and Counting Methods: Isolation of Microorganisms Laboratory:Introduction to Pharmaceutical Microbiology Laboratory	
Week - 2		Microbial Isolation Diagnosis and Counting Methods: Detection of microorganisms Laboratory Media Preparation -Sterilisation and Disinfection	
Week - 3		Microbial Control: Measurement and Counting Methods of Microbial Growth, Sterilisation Laboratory: Streaking Techniques	
Week - 4		Microbial Control: Disinfection Laboratory: Macroscopic Examination of Microorganisms Microbial Preparation, Staining and Examination (Bacteria, Yeast, Mould)	
Week - 5		Pharmaceutical Industry and Microbiology: Microbiological Control in Pharmaceutical Manufacturing Process, Sterile working areas and working conditions Laboratory: DNA Isolation	
Week - 6		Pharmaceutical Industry and Microbiology: Control of Sterile Products, Control of Microbial Protective Activity in Drugs Laboratory: Microbial Metabolism Tests (Carbohydrate Metabolism)	
Week - 7		Microbiological Control in Foods: Microflora of Foods and Microbial Spoilage, Determination of Microorganism Levels in Foods Laboratory: Microbial Metabolism Tests (Protein Metabolism)	
Week - 8		Microbiological Control in Cosmetic Products: Microbiological Control Tests in Cosmetic Products Laboratory: Imaging Methods in Microbiology	
Week - 9		Obtaining Biotechnology Pharmaceutical Products: Production of Pharmaceutical Products by Genetic Engineering Techniques Laboratory: Colony Count in Petri Colony Count in Microscope	

Course Syllabus

Weeks	Learning Outcomes	Topics	Teaching Methods
Week - 10		Chemotherapeutic agents and their effects on microorganisms: Antimicrobial Drugs Classification and General Definitions Laboratory: Microbiological Analysis in Work Areas, Microbial Analysis of Lab Air, Counter Surface Microbiological Control in Sterile Products	
Week - 11		Chemotherapeutic agents and their effects on microorganisms: Mechanism of Action of Antibiotics, Antifungals and Antivirals Laboratory: Microbiological Control in Foods	
Week - 12		Chemotherapeutic agents and their effects on microorganisms: Mechanism of microbial resistance Laboratory Microbiological Control in Cosmetic Products	
Week - 13		Chemotherapeutic agents and their effects on microorganisms: Antibiotic Susceptibility Tests Laboratory: Antimicrobial Mechanisms of Action	
Week - 14		Chemotherapeutic Agents and Their Effects on Microorganisms: Antibiotic Susceptibility Tests Laboratory: Antimicrobial Mechanisms of Action	

Learning Outcomes

#	Learning Outcome
1	Will be able to list the isolation methods of microorganisms.
2	Will be able to explain the detection methods of microorganisms.
3	Will be able to define the measurement and counting methods of microbial growth.
4	Will be able to explain sterilisation.
5	Will be able to explain disinfection.
6	Explain the microbiological control methods in the pharmaceutical production process.
7	Will be able to explain sterile working areas and working conditions.
8	Will be able to explain the control methods in sterile products.
9	Will be able to explain the methods of control of microbial protective activity in drugs.
10	Will be able to explain microflora of foods and microbial spoilage.
11	Will be able to explain the determination of microorganism levels in foods.
12	Explain Microbiological Control Tests in Cosmetic Products.
13	Will be able to explain the processes of pharmaceutical products.
14	Will be able to explain the processes of obtaining pharmaceutical products with genetic engineering techniques.
15	Explain the classification and general definitions of antimicrobial drugs.
16	Explains the Mechanisms of Action of Antibiotics, Antifungals and Antivirals.
17	Will be able to explain the mechanisms of microbial resistance.
18	Will be able to explain antibiotic susceptibility tests.
19	Laboratory: Will be able to explain the rules to be considered in microbiological laboratory studies.
20	Laboratory: Explain microscopy.
21	Laboratory: Will be able to explain the equipment used in microorganism cultivation.

Learning Outcomes

#	Learning Outcome
22	Laboratory: Explain Glass Materials.
23	Laboratory: Will be able to explain sterilisation techniques.
24	Laboratory: Will be able to explain disinfection techniques.
25	Laboratory: Explain Sterilisation Control of Media Prepared in Petri Plates.
26	Laboratory: Explain hand disinfection.
27	Laboratory: Explain the preparation of the medium.
28	Laboratory: Explain the preparation of solid and liquid media.
29	Laboratory Explain sterilisation practices.
30	Laboratory: Explain the application of different sowing techniques.
31	Laboratory: Explain the application of examination techniques in solid and liquid culture.
32	Laboratory: Explain the preparation and examination of bacterial preparation.
33	Laboratory: Explain microscopic examination of mould and yeast.
34	Laboratory: Will be able to explain DNA Isolation.
35	Laboratory: Will be able to explain carbohydrate metabolism.
36	Laboratory: Explain Protein Metabolism.
37	Laboratory:Will be able to explain the open Petri method.
38	Laboratory:Will be able to explain the swap method.
39	Laboratory: Explain the microbiological analysis of lotion.
40	Laboratory: Explain Antimicrobial Substances and Their Activities.

Sustainable Development Goals

No content has been provided.

Course Theme

No content has been provided.

AKTS Workload

Activity	Duration (Hour)	Count	Workload
Teorik Derse Katılım	0	0	0
Sınıf Dışı Çalışma (Ön Hazırlık & Pekiştirme Amaçlı)	0	0	0
Ödevler	0	0	0
Proje - Rapor - Sunum Hazırlama	0	0	0
Ara Sınav Hazırlığı (sınav süresi dahil)	0	0	0
Final Sınavı Hazırlığı (sınav süresi dahil)	0	0	0
Uygulama (Laboratuvar, Müzik/Enstrüman Uygulaması, Atölye/Saha Çalışması vb.)	0	0	0
Staj Uygulaması	0	0	0
		Calculated ECTS	**0**

Assessment Method and Passing Requirements

No content has been provided.