

Sabancı University, 2020-2021 Fall Term, BIO306 Microbiology

Course Instructor:

Prof. Dr. Zeynep Petek ÇAKAR, Istanbul Technical University

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Textbook: Madigan, Bender, Buckley, Sattley, Stahl, 'Brock Biology of Microorganisms', 15th edition, 2018, Pearson, (available at Homer Bookstore at Sabancı University)

Link for buying the book online:

<https://www.homerbooks.com/urun/brock-biology-of-microorganisms>

Course Content:

- The microbial world (microorganisms, microscopy, microscopic staining and history of microbiology) (Chapter 1 in textbook)
- Microbial cell structure and function (Chapter 2)
- Microbial metabolism (Chapter 3)
- Microbial growth and its control (Chapter 5)
- Viruses and their replication (Chapter 8)
- Microbial systems biology (Chapter 9)
- Genetics of bacteria and archaea (Chapter 11)
- Biotechnology and synthetic biology (Chapter 12)
- Microbial evolution and systematics (Chapter 13)
- Microbiology of the built environment (Chapter 22)
- Epidemiology (Chapter 29)

Objective:

The objective of the course is to introduce the basic principles and modern applications of microbiology

Major Learning Outcomes:

- Demonstrate knowledge of microbiology and its applications.
- Demonstrate knowledge of classical, molecular, and genomic methods to identify microorganisms isolated from natural environments.
- Ability to implement the microbiology knowledge and the aseptic principles in daily life.

Evaluation:

Term project	25%
Presentation of the Term Project	25%
Homeworks	15%

Attendance and active participation	15%
Laboratory (homeworks and lab raports total)	20%