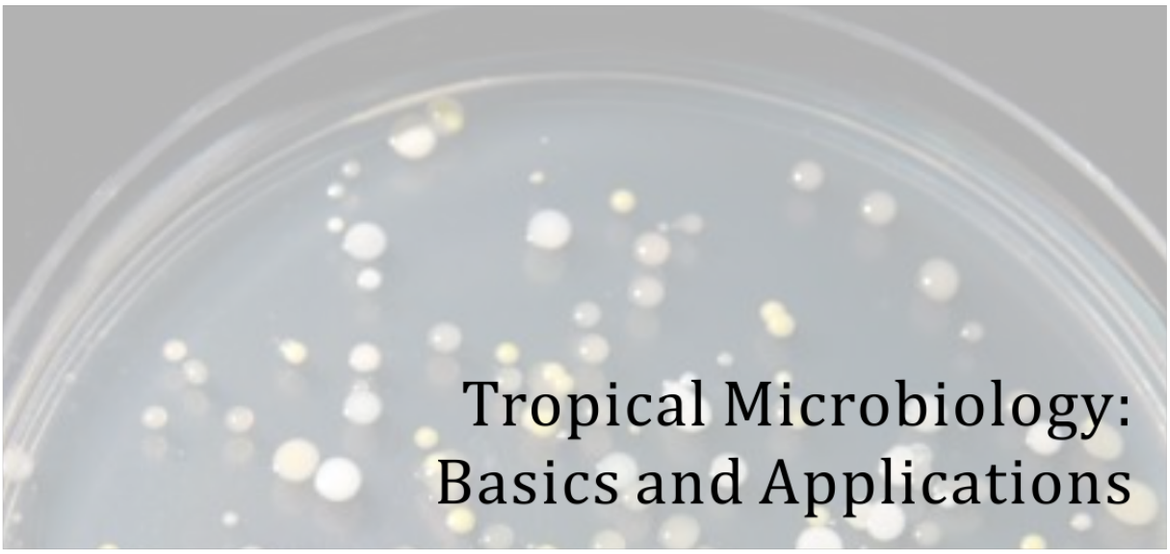
Tropical Microbiology



Tropical Microbiology: Basics and Applications

Credit: 3 (2-1)

Description

This course covers basic and application aspects of microbiology, essential to understand the functional traits of microbes in the tropical environment and processes. Certain topics will be introduced during 14 weeks of courses, emphasizing biodiversity and systematics, ecology, physiology, as well as microbial bio-prospecting. Basics knowledge on microbiology will be given during the first seven weeks of courses, which further be followed with lecture on microbial application in various fields including agriculture, food, and health. In this course, students will be exposed to the uniqueness and knowledge on the indigenous application of microbes in Indonesia, including biofertilizer and control agents, fermented and functional food, as well as ethno-medicinal purposes. Laboratory works and field trip will be conducted as integral part of the course.

Learning Outcomes

After completing this course, students will be able to identify and describe the importance of microbes, particularly in tropical region. Students will also be able to explain the potential link between basic knowledge on microbiology with the corresponding role of indigenous microbes in tropical environment and processes.

Topic

1. Microbial Diversity
2. Microbial Growth
3. Microbial Evolution and Systematics
4. Primary metabolism
5. Secondary metabolism
6. Biogeochemical cycle
7. Microbial ecology and interaction

8. Biofertilizer
9. Fermented Food
10. Functional Food
11. Role of microbes in tropical environment
12. Role of microbes in traditional Indonesian Medicine
13. Biocontrol of Microbial Plant Pathogen
14. Capita Selecta

Link

- Home [International Class in Tropical Biosciences]
  - Tropical Microbiology: Basics and Applications
  - Indonesian Archipelago: Animal Biodiversity
  - Indonesian Ethnobotany
  - Indonesian Bioresources for Health
  - Rural and Urban Biodiversity
- Faculty Member
- Department of Biology