



| Code            | Subject Title               | Cr. Hrs  | Semester   |
|-----------------|-----------------------------|----------|------------|
| <b>ZOOL-415</b> | <b>General Microbiology</b> | <b>2</b> | <b>VII</b> |
| Year            | Discipline                  |          |            |
| <b>4</b>        | <b>Zoology</b>              |          |            |

### Course Contents

Introduction: history of microbiology, development of laboratory techniques to study microorganisms, their importance and applications. The scope of microbiology; classifications of microorganisms, prokaryotic and eucaryotic microorganisms, archaeobacteria, eubacteria. Distinctive characteristics of major groups of microorganisms; protozoa, algae, fungi, bacteria and viruses.

Characterization of microorganisms; pure culture techniques, microscopes. Nutritional requirements and microbiological media. Cultivation and growth of microorganisms. Control of microorganisms; principles, chemical and physical agents. Major groups of prokaryotic microorganisms: bacteria; Eubacteri; Gram-negative bacteria, Gram-positive bacteria, Mycoplasmas, Archaeobacteria; methanogens, red extreme halophiles, sulfur-dependent archaeobacteria, thermoplasmas.

Microbiology of natural waters, drinking water and waste water. Microorganisms and disease, nosocomial infections, airborne diseases, foodborne and air borne diseases. Biotechnology, the industrial applications of microbiology; products of microbial dissimilation, products of microbial synthesis.

### Recommended Books

- Pelczar, M.J. Jr., Chan, E.C.S. and Krieg, N.R. 1986. Microbiology– McGraw Hill Inc., New York.
- Benson, H.J., 1994. Microbiological applications. WmC Brown Publishers, Dubuque, USA.
- Alcamo, E. 1994. Fundamentals of Microbiology. The Benjamin/Cummings Publishing Co. Inc. Redwood city, CA 94065.
- Pelczar, M.J. Jr., Chan, E.C.S. and Krieg, N.R. 1993. Microbiology concepts and applications – McGraw Hill Inc., New York.