

Enjoy while you learn !

FOR THE DURATION OF THE COURSE, THE VIDEOS ARE AVAILABLE IN THE MAIN LIBRARY AT THE IRCHEL CAMPUS (STRICKHOF) WHERE THEY MAY BE VIEWED INDIVIDUALLY DURING LIBRARY OPENING HOURS. FOR THE REST OF THE YEAR THEY MAY BE VIEWED IN THE LIBRARY AT THE BOTANICAL GARDEN.

"Unseen Life on Earth" is an introduction to microbiology which gives biology students a unique opportunity to dynamically learn complex topics and enhance their understanding of the microbial world. The series is designed for students who have had introductory biology and chemistry coursework. The video series consists of 12 half-hour programs that cover various aspects of microbiology.

The background information to the individual programs in the series may be found in the currently used microbiology textbook ([BBOM 10th ed.](#)), and we are making reference to particular videos in the course program. The videos contain much more information than we will cover during the lectures; and they might stimulate you to become informed about the many facets of the most exciting fields of microbiology.

Contents of the 12 series:

MICROBIAL CELL BIOLOGY

1. **The Microbial Universe** An overview of the world of microorganisms; how a group of scientists identified a previously unknown microbe; basic laboratory techniques and microbial genetic codes.
2. **The Unity of Living Systems** Similarities among prokaryotic and eukaryotic organisms; diverse patterns of cell assembly; the relationship of cell types to non-cell entities such as viruses.
3. **Metabolism** Production of energy and transformation of the environment by microbial metabolism; construction and use of molecules by microorganisms.

MICROBIAL GENETICS

4. **Reading the Code of Life** The central role of DNA in carrying and replicating information; mutations; microbial regulation of genetic products to conserve energy and adapt to new environments.
5. **Genetic Transfer** Genetic diversity through horizontal gene transfer; conjugation, transformation and transduction; exploitation of these processes through recombinant DNA.

INTEGRATING THEMES

6. **Microbial Evolution** New theories of evolution and the relationships among organisms; development of genetic techniques using molecular sequences to trace phylogenetic relationships of microbial life.
7. **Microbial Diversity** Relationships between bacteria, archaea, and eukaryote branches of life; impact of diversity in natural habitats and the laboratory.

MICROORGANISMS IN THE ENVIRONMENT

8. **Microbial Ecology** Microorganisms as processors of oxygen, nutrients and waste; important environments dominated by microbes; the essential role of microbes in human life.
9. **Microbial Control** Controlling microbes in special situations, e.g., food safety and hospitals; strategies used in microbial control.

MICROORGANISMS AND HUMAN LIFE

10. **Microbial Interactions** Symbiotic relationships among microbes; relationships between microbes and higher organisms.
 11. **Human Defenses** Strategies used by invading microbial pathogens; exploration of the coordinated human defense system through visual analogy, animation and examples of specific diseases.
 12. **Microbes and Human Diseases** Microbial and human encounters that result in disease; factors in disease outbreaks; current efforts to track infectious diseases and control disease worldwide.
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