

## NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Biotechnology - NOC:Microbial Biotechnology

Subject Co-ordinator - Prof. Utpal Bora

Co-ordinating Institute - IIT - Guwahati

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

Lecture 1 - Introduction and principles of microbial biotechnology

Lecture 2 - Classification and taxonomy of microbes A

Lecture 3 - Classification and taxonomy of microbes B

Lecture 4 - Techniques for microbial Classification and Identification

Lecture 5 - Structure, life cycle and classification of viruses

Lecture 6 - Structure and life cycle of representative groups of prokaryotic microbes

Lecture 7 - Structure of cyanobacteria and archaea

Lecture 8 - Diversity and Structure of selected eukaryotic microorganisms

Lecture 9 - Life cycle of representative groups of microbes

Lecture 10 - Basic Physiology of Microorganisms

Lecture 11 - Physiology of Extremophiles and adaptation-energy storage, temperature, pH and pressure

Lecture 12 - Physiology of Extremophiles and adaptation-halophiles, xerophiles, radiophiles and metallaphiles

Lecture 13 - Genome structure, transcription, genetic code, translation

Lecture 14 - Regulation of gene expression

Lecture 15 - Microbial growth kinetics

Lecture 16 - Control methods: Physical methods

Lecture 17 - Control methods: Chemical methods

Lecture 18 - Control methods: Biological methods

Lecture 19 - Microorganisms in industry

Lecture 20 - Microorganisms in pharmaceutical industry

Lecture 21 - Microbial Enzymes of Industrial Importance

Lecture 22 - Engineered Microbial Consortia for Industry

Lecture 23 - Microbes in Agriculture

Lecture 24 - Microbial Biocontrol

Lecture 25 - Biopesticides and Integrated Pest Management

Lecture 26 - Microbial ecology, biogeochemical cycles

Lecture 27 - Microbial waste treatment methods

Lecture 28 - Microbial Bioremediation

Lecture 29 - Fermented Food - Foundations and Principles

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- Lecture 30 - Health Benefits, Risks and Advances in Food Fermentation
- Lecture 31 - Fermented Beverages: Microbial Processes and Biotechnological Innovations
- Lecture 32 - Industrial Fermentation and Health Aspects of Fermented Beverages
- Lecture 33 - Single Cell Protein production
- Lecture 34 - Production of biopharmaceuticals (Enzymes, antibodies and therapeutic proteins) using rDNA technology
- Lecture 35 - Production of vaccines
- Lecture 36 - Production of Biofuel using microbes
- Lecture 37 - Microbial fuel Cells (MFCs) and microbial electrolysis cells (MECs)
- Lecture 38 - Introduction to IPR, biotechnology patents, app. process, legal and ethical considerations
- Lecture 39 - Patenting in microbial biotechnology, commercialization and future of microbial patenting