

# Devi Ahilya Vishwavidyalaya Indore (M.P.)

Department of Higher Education, Govt. of M.P.

Post Graduate Semester wise Syllabus

As recommended and Approved by Board of Studies D.A.V.V.

उच्च शिक्षा विभाग, म.प्र. शासन

स्नातकोत्तर कक्षाओं के लिये सेमेस्टर अनुसार पाठ्यक्रम

अध्ययन मण्डल देवी अहिल्या विश्वविद्यालय द्वारा अनुशंसित तथा अनुमोदित

Session (सत्र)

2020-21

M. Sc. Botany (Semester System)

Fourth Semester

Course PG 403: Industrial Microbiology (Elective Paper I)

85+15

- UNIT I:** Basic techniques in microbiology - Microscopy, staining techniques, Culture, Nutrition and growth of microorganisms. Replication and structure of viruses and other a cellular microorganisms, prokaryotic microorganisms, classification and diversity of Bacteria, Eukaryotic microorganisms.
- UNIT II:** Food Microbiology: Food spoilage, Food preservation methods, Microbiological production of food such as fermented products, alcoholic beverages, vinegar. Fermented vegetables. Single cell protein production in industry, fermented dairy products and uses.
- UNIT III:** Fermentation Industry: Selection of micro-organisms, Techniques and quality control, Production of antibiotics, steroids, Human proteins, Vaccines and vitamins. Survey of microorganisms of industrial uses. Production of organic acids, amino acids, Enzymes, Solvents and fuels.
- UNIT IV:** Microbial Products: Recovery of minerals by using microbes, Oil recovery, Biodeterioration, Mushroom culture, Biotech products including human insulin, Microbial Growth-Environmental influences, Physical control, Chemical control and Antibiotic controls.
- UNIT V:** Water quality in industry: Bacteriological safety of potable water, water quality analysis, importance of BOD. Biodegradation of wastes and pollutants, Primary, Secondary and Tertiary Sewage treatments.

## PRACTICALS

Laboratory exercises corresponding to theory courses covering all Units.

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06-3-19

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