

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 402:

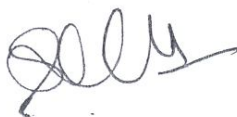
Genetic Engineering and Genomics

85+15

- UNIT I: **Basics concept:** Recombinant DNA technology and its Tools– Cloning Vectors (Plasmids, Bacteriophage M13 Cosmids, Phasmid, Lambda YACs, BAC Vectors), Restriction enzymes and others –Types and applications.
- UNIT II: **Cloning Methodology:** Gene cloning, principle and techniques; Construction of libraries, cDNA and genomic library. cDNA Genomic Cloning; Principle of DNA sequencing, Polymer Chain reaction; DNA finger printing.
- UNIT III: **Genomics:** Basic concept, types and strategies for genome analysis. DNA chips technology and microarrays; Genetic improvement of industrial microbes, Nitrogen fixers; Transcriptome; Rice Genome Project, Arabidopsis Genome Project.
- UNIT IV: **Proteomics:** Concept, methodology and application of Proteomics; Protein profiling. Bioinformatics basic concept and its application in biological science; Ribotyping.
- UNIT V: **Transgenic plants:** Strategies and methodology for development transgenic plants; Agrobacterium mediated gene transfer; Transposon tagging and direct gene transfer techniques. Ecological risk and ethical concern; Intellectual property rights.

PRACTICALS:

Laboratory exercises corresponding to theory courses covering all units.



06.3.19
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