**Course outcomes**

**B.Sc – Industrial Microbiology IIIrd year**

**Semester- V**

**Subject: Agricultural Microbiology (Theory & Practical)**

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| **Co1** | Explain diversity of soil microorganism and their interaction among microbes, plant and animal interactions. |
| **Co2** | Describe the major soil borne diseases of plants and their transmission |
| **Co3** | Study the Biodegradation of cellulose, hemicellulose, lignin and pectin and factors affecting it. |
| **Co4** . | Describe the Disease cycle and control of following diseases caused by viruses, bacteria and fungi in plants |
| **Co5** | Briefly description of major commercial biopesticides based on fungi, bacteria and viruses. |
| **Co6** | What are the roles of microbial based biopesticides and their mechanism of action. |

**Subject: Fermentation technology and IPR (Theory & Practical)**

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| **Co**1  | Understand the development in the production of the microbial based products. |
| **Co2** | Study the parameters which are desirable in the selection of industrial microorganisms |
| **Co3** | Explain the components of fermentation media for the production of microbial products. |
| **Co4** | Recognize the design of fermentors required for the growth of microorganisms for a particular product. |
| **Co5** | Acquaint with the intellectual property right, patentable and non patentable items |

**CREDITS**- 3 **THEORY PERIODS OF EACH PAPER OF 45 MINUTES EACH PER WEEK OVER A SEMESTER**

 **6 PRACTICAL PERIODS OF 45 MINUTES EACH PER WEEK OVER A SEMESTER**

**B.Sc – Industrial Microbiology IIIrd year**

 **Semester- VI**

**Subject: Microbial biofertilizers (Theory & Practical)**

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| **Co1** | Describe Rhizosphere concept, R:S values, Mycorhizosphere and Actinorhizae. |
| **Co2** | Elucidate the Significance of rhizosphere microflora. |
| **Co3** | Briefly description of major microorganisms used as biofertilizers |
| **Co4** | Explain types of Mycorrhizal Biofertilizer and explain its role in plant growth. |
| **Co5**  | Assessment of nitrogen fixing ability of different strains under controlled and field conditions |

 **Subject:** **Microbial Biotechnology** **(Theory & Practical)**

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| **Co1** | Explain the role of microorganism in the commercial production of value added products |
| **Co2** | Describe the commercial production of biofuels, alcoholic beverages, organic acid, antibiotics, amino acids, enzymes, microbial foods |
| **Co3** | Recognize the role of vectors, restriction endonucleses, and selection of recombinant clones in genetic engineering. |

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 **6 PRACTICAL PERIODS OF 45 MINUTES EACH PER WEEK OVER A SEMESTER**