

Core Courses for Semester – IV

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| MSNT401-CR | Research Proposal writing |
| 4 Credits | |
| MSNT402-CR | Project-RESEARCH BASED |
| 8 Credits | |

Discipline Centric Courses for Semester – IV

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| MSNT403-DCE | Project Presentation |
| 4 Credits | |
| MSNT404-DCE | Laboratory Bio Safety Course- Self Study |
| 2 Credits | |

Unit-I

Biosafety- Introduction; Historical Background; Introduction to Biological Safety Cabinets; Primary Containment for Biohazards; Biosafety Levels; Biosafety Levels of Specific Microorganisms; Recommended Biosafety Levels for Infectious Agents and Infected Animals; Biosafety guidelines - Government of India;

Unit-II

Definition of GMOs & LMOs; Roles of Institutional Biosafety Committee, RCGM, GEAC etc. for GMO applications in food and agriculture; Environmental release of GMOs; Risk Analysis; Risk Assessment; Risk management and communication; Overview of National Regulations and relevant International Agreements including Cartagena Protocol.

Books Recommended

- *John E. Smith, Biotechnology, 3rd Ed. Cambridge University Press.*
- *Tutorials.*

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| MSNT405-DCE | VIVA-VOCE |
| 2 Credits | |