

PRACTICALS (HARD CORE COURSES)

BTP 556 ANIMAL BIOTECHNOLOGY

Course outcome

The student will

- CO 1. Learn the set-up of a typical cell culture laboratory
- CO 2. Acquire sterilization techniques
- CO 3. Learn the use different media
- CO 4. Acquire techniques used in animal cell culture.

Cleaning and sterilization methods for tissue culture
Preparation of media, buffers
Maintenance of cultures (normal and tumor cell lines)
Separation of peripheral blood mononuclear cells
Cell counting (hemocytometer)
Lymphocyte culture technique
In vitro macrophage culture from mouse
Preparation of human metaphase chromosomes
Cell viability tests
Cell proliferation assay
Growth kinetics of cells in culture
In vitro fertilization and embryo transfer techniques
Cryopreservation techniques
Cytotoxicity tests

BTP 557 ENVIRONMENTAL BIOTECHNOLOGY

Course outcome

The student will

- CO 1. Acquire skills and techniques used in waste management
- CO 2. Learn mechanisms of waste treatment
- CO 3. Become skilled in vermicomposting and mushroom cultivation
- CO 4. Understand biogas production

Production of compost (methods)
Vermicompost and its analysis
Cultivation of mushrooms
Biogas (biofuels) production
Wastewater treatment methods
Solid waste treatment methods
Experiments on biofouling and biofilms
Experiments on industrial waste treatment methods (e.g. distillery, whey)

BTP 558 PROJECT WORK

Course outcome

The student will learn to:

- CO 1. Work independently on a research project
- CO 2. Gather background information and synthesise relevant information
- CO 3. Create a hypothesis and objectives
- CO 4. Learn to communicate scientific facts and present the same
- CO 5. Analyse data and interpret the same
- CO 6. Publish the results

