

PRACTICALS (HARD CORE COURSES)

BTP 555 ANIMAL BIOTECHNOLOGY

Course outcome

The student will

- Learn the set-up of a typical cell culture laboratory
- Acquire sterilization techniques
- Learn the use different media
- 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 556: ENVIRONMENTAL BIOTECHNOLOGY

Course outcome

The student will

- Acquire skills and techniques used in waste management
- Learn mechanisms of waste treatment
- Become skilled in vermicomposting and mushroom cultivation
- 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 557 PROJECT WORK

Course outcome

The student will learn to:

- Work independently on a research project
- Gather background information and synthesise relevant information
- Create a hypothesis and objectives
- Analyse data and interpret the same
- Publish the results