PRACTICAL COURSES
BSP 554 BIOTECHNOLOGY LAB

Course Outcomes:

After successful completion of the course, students will be able to:

CO 1. Develop laboratory skills in biotechnology
CO 2. Use solid surface fermentation technique for production of antibiotics.
CO 3. Carry out PCR and do the analysis
CO 4. Do vermicomposting and mushroomcultivation.
CO 5. Perform plant tissue culture techniques and check the nutritional and anti-nutritional qualities of edible seeds.

1. Production and analysis ofvermicompost
2. Identification, collection and cultivation ofmushrooms
3. Submerged and solid-substratefermentation.
4. Production and assessment of enzymes, mycotoxins, organic acids andantibiotics.
5. Isolation and induction of root nodules byrhizobia
6. Isolation and mass production of arbuscular mycorrhizalspores.
7. Plant tissueculture
8. Evaluation of nutritional and antinutritional qualities of edibleseeds.
9. Evaluation of soil qualities (e.g. texture, bulk density and water holdingcapacity)
10. Evaluation of soil components (e.g. nitrogen, phosphorus, organiccarbon)
11. Pattern of decomposition of organic matter (e.g. leaf and woodylitter)
12. Biogasproduction
13. Functional properties of food (e.g. water absorption capacity, gelation, foaming and emulsion)
14. DNA extraction methods and PCR /RT PCR confirmation
15. Analysis of RT PCR data in terms of copy number or quantification.
16. Analysis of DNA and protein sequences.

BSP555 ENVIRONMENTAL PHYSIOLOGY LAB

Course Outcomes:

After successful completion of the course, students will be able to:

CO 1. Conduct experiments in environmental physiology
CO 2. Determine blood indices, blood pressure and thermal stress.
CO 3. Demonstrate rate of transpiration, effect of temperature on the rate of respiration and plant responses to salinity and metal stress..
CO 4. Know how to check the seed health and effect of salinity on seedgermination.
CO 5. Check viability of seeds, inducers and inhibitors ofgermination.

1. Haematology-
   1.1 Determination of bloodindices
   1.2 Determination of bloodpressure.
2. Respiration-
   2.1 Estimation of oxygen consumption by the organism under stressed condition (thermal stress).
   2.2 Demonstration of rate of transpiration byphotometry.
   2.3 Effect of temperature on the rate ofrespiration.
3. Seed physiology–
   3.1 Seed healthtesting.