



Programme	BSSEd	Course Code	SE-311L	Credit Hours	1
Course Title	BOTANY IV- Lab (Plant Physiology and Ecology)				
Course Introduction					
The course is organized to cover physiological processes involved in plant interaction with the environment, including water relations, gas exchange, photosynthesis, respiration, energy balance, mineral nutrition, responses to the environment and plant hormones. It is generally aimed to familiarize students with the ecological concepts focusing on biotic and abiotic factors involved in establishing plant communities.					
Learning Outcomes					
On the completion of the course, the students will: The aim is to give the students increased knowledge of metabolism, physiology and structure of plants together with a better understanding of regulation of growth and development and influence of environment.					
Course Content			Assignments/Readings		
Week 1	PLANT PHYSIOLOGY Practical 1: Determination of Uptake of Water by Swelling Seeds when placed in Sodium Chloride Solution of Different Concentrations.		Practical copy preparation		
	Complete				
Week 2	Practical 2: Determination of the Temperature at which Beet Root Cells lose their permeability.		Practical copy preparation		
	Complete				
Week 3	Practical 3: Determination of the effects of environmental factors on the rate of transpiration of a leafy shoot by means of a photometer by Cobalt Chloride Paper method		Practical copy preparation		
	Complete				

Week 4	Practical 4: Extraction of Chlorophyll from the leaves and Separation of Component Pigments on a Paper Chromatogram.	Practical copy preparation
	Introduction and performance	
Week 5	Practical 4: Extraction of Chlorophyll from the leaves and Separation of Component Pigments on a Paper Chromatogram.	Practical copy preparation
	Results and discussion	
Week 6	Practical 5: Study of Absorption Spectra using Spectrophotometer.	Practical copy preparation
	Introduction and performance	
Week 7	Practical 5: Study of Absorption Spectra using Spectrophotometer.	Practical copy preparation
	Results and discussion	
Week 8	Practical 6: Estimation of Oxygen utilized by a Respiring Plant by Winkler's method.	Practical copy preparation
	Introduction and performance	
Week 9	Practical 6: Estimation of Oxygen utilized by a Respiring Plant by Winkler's method.	Practical copy preparation
	Results and discussion	
Week 10	Practical 7: Extraction of Amylase from Germinating Wheat Seeds and study of its effect on Starch Break Down.	Practical copy preparation
	Complete	

Week 11	Practical 8: Measurement of Carbon Dioxide Evolution during Respiration of Germinating Seeds by the Titration Method.	Practical copy preparation
	Complete	
Week 12	Practical 9: Effect of Light and Temperature on Seed Germination.	Practical copy preparation
	Complete	
Week 13	ECOLOGY Practical 1: Determination of Physical and Chemical Characteristics of Soil.	Practical copy preparation
	Complete	
Week 14	Practical 2: Measurement of Light and Temperature.	Practical copy preparation
	Complete	
Week 15	Practical 3: Measurement of Vegetation by Quadrat and Line Intercept Methods.	Practical copy preparation
	Complete	
Week 16	Practical 4: Measurements of Wind Velocity. 5. Field Trips to Ecologically Diverse Habitats.	Practical copy preparation
	Complete	
Reading Material		
Practical Material will be provided by the teacher.		
Teaching Learning Strategies		
1. Laboratory Work 2. Group Work		
Assignments: Types and Number with Calendar		
1. Quiz 2. Presentation 3. Written Test 4. Class discussion		