

<b>LS 426A</b> <span style="float: right;"><b>Plant Physiology</b></span> <span style="float: right;"><b>2 Credits</b></span>		
Name of the Faculty: Prof. Ashis K. Nandi*; Prof. S. Chakraborty; Dr. Amarjeet Singh		
S.No.	Topic	Faculty Name/ Contact Hours
1.	Basic life process of plants, cell structure, membrane, organelles, cytoskeleton, cell cycle regulation, totipotency, regeneration	SC/2
2.	Transport processes in plant: active and passive transport systems, ion channels, driving forces and flow, transport of photo-assimilates, transport of proteins and nucleic acids through phloem, phloem signaling.	AJS/2
3.	Photosynthesis: Light absorption, emission, energy transfer, Z-scheme of photosynthesis, electron transfer, photophosphorylation, CO <sub>2</sub> fixation, C3, C4, CAM plants, environment and its impact on photosynthesis.	AJS/4
4.	Mineral nutrition and assimilations of inorganic nutrients: nitrogen and sulfur metabolism, and assimilation of other anions and cations.	AJS/4
5.	Plant Hormones: Biosynthesis, homeostasis, transport, and signalling of Auxin, Cytokinins, Gibberellins, Abscisic acid, Ethylene and Jasmonic acid	AN/8
6.	Phytochromes, photoreceptors and photo-morphogenesis.	AN/2
7.	Lipid metabolism in plants: Fatty acid biosynthesis, membrane lipid biosynthesis, lipid desaturation, triacylglycerols, complex lipids, cell wall lipids, alkaloids, ceramides.	AN/2
8.	Senescence	AN/2
9.	Stress physiology and Programmed cell death.	AN/3

**Suggested reading:**

1. Plant Physiology by L. Taiz and E. Zeiger
2. Biochemistry and Molecular Biology of Plants by B. Buchanan, W. Gruissem, and R.L. Jones
3. The Molecular Life of Plants by R. Jones, H.Ougham, H. Thomas, and S. Waaland