

**SARDAR PATEL UNIVERSITY**  
**Programme: BSC (BOTANY)**  
**Semester: V**  
**Syllabus with effect from: June 2013**

<b>Paper Code:</b> US05CBOT02	<b>Total Credit: 3</b>
<b>Title Of Paper:</b> Structural, Adaptive and Reproductive Biology of Angiosperms	

Unit	Description in detail	Weighting (%)
<b>1</b>	<b>Introduction of plant anatomy:</b> Concept of plant anatomy - Application in plant systematics, forensic and pharmacognosy. Literatures in plant anatomy, Data-base, Centers of plant anatomical research in India. Ergastic substances in plants. Apical cell theory, histogen theory, tunica corpus theory, plastochrone; Shoot chimeras; primary xylem and primary phloem. Korper –kappe theory, quiescent centre, root cap, rhizodermis, cortex, endodermis, exodermis, secondary growth in roots.	
<b>2</b>	<b>Adaptive Biology</b> Cuticle, epicuticular waxes, trichomes, anatomical adaptations in stems, leaves and roots of xerophytes, hydrophytes, halophytes & mesophytes. Seasonal changes in cambium and secondary phloem.	
<b>3</b>	<b>Experimental embryology:</b> Contribution of Indian scientists in experimental embryology. Control of fertilization, embryo culture and its application, induced parthenogenesis, production of adventives embryos, induced parthenocarpy.	
<b>4</b>	<b>Pollination &amp; post pollination biology:</b> Pollen - pistil interaction; Self incompatibility; Fruit development and Maturation; Dispersal of fruits and seeds; pollen allergy.	

**Basic Text & Reference Books:**

- Gangullee, Das and Dutta: College Botany
- Bhojwani, S. S. and Bhatnagar S P: The embryology of angiosperms
- Fahn A.: Plant anatomy
- Maheshwari, P.: An introduction to the embryology of angiosperms.
- Dickinson, W.C. : Integrative plant anatomy (Harcourt Academic Press, USA)
- Shivanna, K. R. & N. S. Rangaswami, 1993. Pollen Biology Narosa Publishing House Delhi.
- Shivanna & Johri.: The Angiosperm Pollen
- Singh V, Pande PC & D K Jain: Structure Development and Reproduction in angiosperms

