

**SARDAR PATEL UNIVERSITY**  
**Programme: BSC (BOTANY)**  
**Semester: IV**  
**Syllabus with effect from: November 2012**

<b>Paper Code:</b> US04CBOT02	<b>Total Credit: 3</b>
<b>Title Of Paper:</b> Basics and Applications of Plant Science	

Unit	Description in detail	Weighting (%)
<b>1</b>	<b>Plant Anatomy</b> Structure of epidermal cells, Structure, function and types of Stomata Structure, distribution, types and function of Laticifers Structure, distribution, function and ecology of Nectaries Structure and activity of Vascular Cambium Structure and function of Periderm Secondary growth of stem of Leptadenia and Boerhavia	
<b>2</b>	<b>Plant Embryology</b> Structure of Microsporangium and Megasporangium Structure and development of male and female gametophyte Pollination: Self and cross pollination, Pollination in Commelina, Sunflower and Fig Double fertilization Endosperm	
<b>3</b>	<b>Genetics</b> Mendel's laws of inheritance Incomplete dominance Back cross and test cross Gene interactions - Dominant epistasis (12:3:1), Recessive epistasis (9:3:4) Supplementary genes (9:3:4), Complimentary genes (9:7) Meiosis Linkage and crossing over	
<b>4</b>	<b>Plant Biotechnology</b> Scope and importance of Biotechnology Application of Biotechnology in medicine, agriculture and industry Biotechnology in biodiversity conservation. Tissue culture - Definition, principle of totipotency of cell Laboratory and Aseptic conditions, equipments. General process of Tissue culture Protoplast culture	

**Basic Text & Reference Books:**

- Plant anatomy: A. Fahn
- College Botany Vol 1: Gangulee, Das and Dutta
- Plant tissue culture and biotechnology: Kavi Kishore P.B.
- Genetics: P.S. Verma and Agarwal
- Text book of Env. Biotechnology: P.K.Mahapatra

