Course code	Course Title	С	Н	Ι	E	Т
17P1BMC2	PHANEROGAMS	6	6	25	75	100

# Unit I Gymnosperms

General features and phylogeny. Classification by Coulter & Chamberlain. Progymnosperms. Salient features of Cycadales, Coniferales and Gnetales with special reference to structure, reproduction and life cycle of *Cycas*, *Agathis* and *Gnetum*. Economic importance of Gymnosperms.

# Unit II Angiosperms

Taxonomy- introduction, brief history, components and hierarchial stages. Functions and importance of Herbaria and Botanical gardens. Taxonomic documentation - Floras, Monographs and Revisions relevant to India. Plant indentification - Keys - dichotomous, single access and multi access. Modern Taxonomy - Biometrics - cluster analysis, phenogram, cladogram. Computer aided taxonomy - Construction of phylogenetic trees - UPGMA and PARISMONY analysis.

## Unit III

Botanical nomenclature - Principles and rules of ICN, Ranks and names, binomial system, sources of botanical names, typification, nyms, retention and rejection and valid publication. Classifications - artificial, natural and phylogenetic, outline of Bentham & Hooker and APG-IV classifications (order level) with their merits and demerits.

# Unit IV

Studies on vegetative, floral characters and economic importance of the following families: Magnoliaceae, Brassicaceae, Meliaceae, Myrtaceae, Apiaceae, Asteraceae, Sapotaceae, Apocynaceae, Verbenaceae.

# Unit V

Amaranthaceae, Aristalochiaceae, Hydrocharitaceae, Orchidaceae, Cannaceae, Liliaceae, Aricaceae, Commelinaceae and Poaceae.

## REFERENCES

- 1. Lawrence, G.H.M., Taxonomy of vascular plants, 1951., Macmillan, New York.
- 2. Singh, V. and Jain, D.K., Taxonomy of Angiosperms, 1981, Rastogi Publications.
- 3. Jones, Jr. and Samuel, B, Plant Systematics, 1987, McGraw- Hill International, New York.
- 4. Gurucharan Singh, Plant Systematics, 2000, Scientific Publication, Jodhpur.
- 5. Sharma, O.P., Taxonomy of Aniosperms, 2002, McGraw-Hill Publication, Ltd. New Delhi.

The Academic Council | The Madura College (Autonomous) | 16<sup>th</sup> December 2016

# 20 Hrs

# 15 Hrs

15 Hrs

#### Page 230

## 20 Hrs

**20 Hrs** 

6. Pullaiah, T., Taxonomy of Angiosperms, 2004, Regency Publication, New Delhi.

# PRACTICALS

- 1. Observation of morphological features of plants discussed in the syllabus.
- 2. Dissection and description of the families in the syllabus.
- 3. Students to be practiced computer aided taxonomy- construction of phylogenetic tree using UPGMA, PARISMONY etc.,
- 4. Students to be taken for study trips.
- 5. Submission of herbarium/plant photo album, field reports and records for evaluation.