



SRI VENKATESWARA UNIVERSITY, TIRUPATHI

4 -Year UG Honours in B.Sc. BOTANY: Major in Consonance with Curriculum Frame work w.e.f AY 2026-27

COURSE STRUCTURE (for Semester III)

Year	Semester	Course	Title of the Course	No. of Hrs /Week	No. of Credits
II	III	5	Morphology and Taxonomy of Angiosperms	3	3
			Morphology and Taxonomy of Angiosperms - Practical	2	1
		6	Plant resources and Utilization	3	3
			Plant resources and Utilization –Practical	2	1
		7	Plant Ecology, Biodiversity and Phytogeography	3	3
			Plant Ecology, Biodiversity and Phytogeography –Practical	2	1

Signatures of the Board of Studies members

Sl No.	Designation	Name	Signature
1	BOS Chairman	Dr Mohano Behera, Department of Botany, Govt. Degree College, Pakala	
2	Member	Dr L. Md. Bakshu, Department of Botany, Dr YSR Govt. Degree College, Veduru Kuppam	
3	Member	Dr M. Hemalatha, Department of Botany, SVCR Govt. Degree College, Palamaner	
4	Member	Dr A. Sasikala, Department of Botany, SVCR Govt. Degree College, Palamaner	
5	Member	Smt. S. Padmavathi, Department of Botany, Govt. Degree College, Puttur	
6	Member	Dr P. Sujana, Department of Botany, Govt. Degree College, Puttur	

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III Semester

COURSE 5: MORPHOLOGY AND TAXONOMY OF ANGIOSPERMS

Theory

Credits: 3

3 hrs/week

I. Learning Objectives: By the end of this course the learner has:

1. To understand the vegetative and reproductive morphology of Angiospermic plant.
2. To acquire knowledge of the taxonomic aids and classification systems.
3. To read the vegetative and floral characteristics of some forms of angiospermic families along with their economic value.
4. To study the significance of other branches of botany in relation to plant taxonomy.

II. Learning Outcomes: On completion of this course students will be able to:

1. Illustrate the vegetative and reproductive morphology of angiosperms
2. Discuss about some Taxonomic aids and their applications in plant systematics.
3. Compare and contrast the vegetative and floral characteristics of some angiospermic families
4. Evaluate the economic value of plant species from the families under the study.
5. Defend the utility of evidences from different branches of botany in solving the taxonomic lineages of some species.

III. Syllabus of Theory:

Unit-1: Vegetative morphology

10Hrs.

1. Parts of an angiospermic plant-root system and shoot system
2. Root -Characteristics, types of root system, modification of root
3. Stem-Characteristics, modification of stem (Aerial, sub aerial and underground)
4. Leaf-Parts of leaf, venation-types, phyllotaxy-types, leaf modifications

Unit-2: Reproductive morphology

8Hrs.

1. Inflorescence: Types of inflorescences; Racemose and its types, Cymose and its types and special types of inflorescences
2. Flower in general: Parts of a flower, structure of a flower, symmetry of a flower, position of gynoecium on thalamus, nature of flower based on perianth, aestivation-types.
3. Flower in detail: Calyx, corolla, Androecium (parts of stamen, attachment of filament to anther, length of stamens, union of stamens and dehiscence of anthers); Gynoecium-Number of carpels, fusion of carpels, number of locules in ovary, placentation, style-types.
4. Fruits: True and false fruits; simple fruits-types; aggregate fruits and composite fruits

Unit-3: Principles of Plant Taxonomy

10 Hrs.

1. Aim and scope of taxonomy, species concept, taxonomic hierarchy-major and minor categories.
2. Plant nomenclature: Binomial system, ICBN- rules for nomenclature.
3. Herbarium and its techniques, BSI herbarium and Kew herbarium; concept of digital herbaria.
4. Bentham and Hookers system of classification; a brief account of APG-IV classification.



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Unit-4: Descriptive Plant Taxonomy

10Hrs.

Systematic description and economic importance of the following families:

1. Polypetalae: (a) Annonaceae (b) Fabaceae (c) Curcubitaceae
2. Gamopetalae: (a) Asteraceae (b) Asclepiadaceae
3. Monochlamydae: (a) Amaranthaceae (b) Euphorbiaceae
4. Monocotyledonae: (a) Orchidaceae (b) Poaceae

Unit-5: Evidences for Plant systematics

7Hrs.

1. Anatomy and embryology in relation to plant systematics.
2. Cytology and cytogenetics in relation to plant systematics.
3. Phytochemistry in relation to plant systematics.
4. Numerical taxonomy

IV. Text Books:

1. Singh, G. (2019). Plant systematics: Theory and practice (3rd ed.). Oxford & IBH Publishing Co. Pvt. Ltd.
2. Stuessy, T. F. (2009). Plant taxonomy: The systematic evaluation of comparative data (2nd ed.). Columbia University Press.
3. Simpson, M. G. (2019). Plant systematics (3rd ed.). Academic Press (Elsevier).
4. Naik, V. N. (1984). Taxonomy of angiosperms. Tata McGraw-Hill Publishing Company.

V. Reference Books:

1. Pandey, B. P. (2022). Taxonomy of Angiosperms (Latest Ed.). S. Chand & Company Pvt. Ltd.
2. Heywood, V. H. (2007). Flowering plant families of the world. Kew Publishing.
3. Judd, W. S., Campbell, C. S., Kellogg, E. A., Stevens, P. F., & Donoghue, M. J. (2016). Plant systematics: A phylogenetic approach (4th ed.). Sunderland, MA: Sinauer Associates.

VI. Suggested activities and evaluation methods:

Unit-1: Activity: Botanical field trip and collecting plant specimens for herbarium. **Evaluation method:** Attendance in field trip and submission of field note book and herbarium sheets with filled in labels.

Unit-2: Activity: Making good models or drawings or collection of photographs of some important plant species from the families included in the syllabus. **Evaluation method:** Authorize the quality of the work and conferring reward.

Unit-3: Activity: Collection of scientific literature on solving taxonomic problems by taking evidences from other branches of Botany.

Evaluation method: Validation of the collection submitted along with summary.

Unit-4: Activity: Field visit to identify plants belong to various families included in syllabus. **Evaluation method:** Evaluating the field note book data, plant specimens collected and herbarium made.

Unit-5: Activity: Collection of literature on evidences from different branches of Botany useful for plant systematics.

Evaluation method: Evaluating the quality of report made using a rubric.



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III Semester

COURSE 5: MORPHOLOGY AND TAXONOMY OF ANGIOSPERMS

Practical

Credits: 1

2 hrs/week

I. Course Outcomes: On successful completion of this practical course, student shall be able to:

1. Make systematic classification of plant species using vegetative and floral characters.
2. Identify angiosperm plant species and make herbarium specimens.

II Laboratory/field exercises:

I. Technical description of an Angiosperm plant

II. Technical description of locally available plant species from the following angiosperm families:

(a) Annonaceae (b) Fabaceae (c) Curcubitaceae (d) Asteraceae (e) Asclepiadaceae

(f) Amaranthaceae (g) Euphorbiaceae (h) Orchidaceae (i) Poaceae

III. Demonstration of herbarium techniques

IV. Field trip to a local floristic area/forest (Submission of 30 number of Herbarium sheets of wild plants with the standard system are mandatory).

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COURSE 5: MORPHOLOGY AND TAXONOMY OF ANGIOSPERMS

Suggested Model Paper for Practical Examination

Max Time: 3 Hrs

Max. Marks: 50

1. Technical identification and description of the given angiosperm family of Specimen 'A' 15 M
2. Derive the given plant specimen 'B' of locally available flora up to family 10 M
3. Demonstrate the herbarium preparation techniques 'C' 05 M
4. Identify and comment on the given specimens/spotters/slides/photographs 4 x 3 = 12 M
 - D. Plant families
 - E. Floral characters / Fruits
 - F. Herbarium sheets
 - G. Economic products
5. Record & Viva- voce 5 + 3 = 08 M


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III Semester

Suggested Model Question Paper for Theory Examinations

Common pattern of Theory Question Paper for Semester-End Examinations.

Max. Time: 3 Hrs.

Max.Marks:75M

Section–A

Answer any Five of the following questions. Draw labelled diagrams wherever necessary

5 x 3 = 15 M

- ✓ Two questions should be given from each Unit of the syllabus.

Section–B

Answer any Five of the following questions. Draw labelled diagrams wherever necessary

5 x 12 = 60 M

- ✓ Two questions (a and b) will be given from each unit in the syllabus, providing internal choice (a or b) within each unit. Students must answer a total of five questions, selecting one question from each unit.

Note: Questions should be framed to test the students' understanding, analytical, and creative skills. All questions must be set strictly within the prescribed syllabus framework.


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4- Year UG Honours, Major
Syllabus
(2026-27)
Semester-III

Model Question Paper

Time : 3hrs

Marks:75

Part-A

Answer any Five Questions. Each Question carries 3 Marks.

5x3=15

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

Answer the following questions. Each question carries 12 Marks

5x12=60

11. a) Unit-I
(Or)
b) Unit-I

12. a) Unit-II
(Or)
b) Unit-II

13. a) Unit-III
(Or)
b) Unit-III

14. a) Unit-IV
(Or)
b) Unit-IV

15. a) Unit-V
(Or)
b) Unit-V