



SAURASHTRA UNIVERSITY

Accredited Grade 'A' by NAAC (CGPA 3.05)

Syllabus on the bases of Choice Based Credit System (CBCS)

For

Semester I & II (F.Y.B.Sc.)

BOTANY

SEMESTER – I

Paper No. B – 101: Plant Diversity

SEMESTER – II

**Paper No. B – 201: Angiosperms, Tools and Techniques in Botany,
Biochemistry and Genetics**

INFORCE FROM JUNE – 2016



FOREWORD

Renewing and updating of the curriculum is an essential part of any vibrant university academic system. Revising the curriculum should be continues process to provide an updated education to the students at large. To meet the need and requirement of the society and in order to enhance the quality and standards of education, updating and restructuring of the curriculum must continue as a perpetual process. As a part of duty of study board, we the member of botany study board designed the new curriculum for First year (i.e. semester I & II) botany students. For designing of the curriculum we followed the UGC guideline for model curriculum. The exercise would not have been possible without the support of our respected faculties of botany. We hope that the results will fulfill expectations of the society.

(Dr. R. D. Raviya)

Other than Chairman
Botany, Board of Studies
Saurashtra University
Rajkot

(Dr. M. M. Jani)

Chairman
Botany, Board of Studies
Saurashtra University
Rajkot

(Dr. Mehul Rupani)

Other than Dean
Faculty of Science
Saurashtra University
Rajkot

(Dr. G. C. Bhimani)

Dean
Faculty of Science
Saurashtra University
Rajkot

SAURASHTRA UNIVERSITY, RAJKOT

Syllabus of Semester – I & II (F.Y. B.Sc.) Botany

Effective from June 2016

This curriculum consists of two theory papers and two practical. Syllabus has been divided in to two semesters (i.e. semester – I and II). Students have to study one paper in each semester and two practical based on theory papers. The course is to be completed by assigning six periods for each theory and six periods for each practical per week. Practical periods are inclusive of field study.

GENERAL DETAILS OF TEACHING HOURS AND COURSE CREDIT

Paper no.	Title of the papers	Lectures	Theory Credit	Practical Credit	Total Credit
I	Plant Diversity	60	04	02	06
II	Angiosperms, Tools and Techniques in Botany, Biochemistry and Genetics	60	04	02	06

Pattern of Examination:

Students will have to attend theory and practical both during the semester and at the end of semester, University exams will be conducted. Examination contains 70% external and 30% internal marks. A student's performance during every practical session is assessed and marks for a maximum of 15 is recorded. External practical evaluation will carry 35 marks, so total 50 marks for each practical per paper examination will be counted. Internal assessment for theory can be following any one as mention below.

Sr. No.	Pattern of Internal Exam	Marks
A	Assignments	10
	MCQ Written Test	10
	Seminar/ presentation	10
OR		
B	MCQ Written Test	30
OR		
C	Assignments	10
	MCQ Written Test	20
OR		
D	Seminar/ presentation	10
	MCQ Written Test	20

Semester I & II (First Year B.Sc.)

SKELETON OF QUESTION PAPER FOR THEORY PAPERS

(EXTERNAL EXAMS)

Question 1 Based on UNIT 1		
Q – 1 (A)	Objective type questions	4 Marks
Q – 1 (B)	Answer in brief (Any 1 out of 2)	2 Marks
Q – 1 (C)	Answer in detail (Any 1 out of 2)	3 Marks
Q – 1 (D)	Write a note on (Any 1 out of 2)	5 Marks
Question 2 Based on UNIT 2		
Q – 2 (A)	Objective type questions	4 Marks
Q – 2 (B)	Answer in brief (Any 1 out of 2)	2 Marks
Q – 2 (C)	Answer in detail (Any 1 out of 2)	3 Marks
Q – 2 (D)	Write a note on (Any 1 out of 2)	5 Marks
Question 3 Based on UNIT 3		
Q – 3 (A)	Objective type questions	4 Marks
Q – 3 (B)	Answer in brief (Any 1 out of 2)	2 Marks
Q – 3 (C)	Answer in detail (Any 1 out of 2)	3 Marks
Q – 3 (D)	Write a note on (Any 1 out of 2)	5 Marks
Question 4 Based on UNIT 4		
Q – 4 (A)	Objective type questions	4 Marks
Q – 4 (B)	Answer in brief (Any 1 out of 2)	2 Marks
Q – 4 (C)	Answer in detail (Any 1 out of 2)	3 Marks
Q – 4 (D)	Write a note on (Any 1 out of 2)	5 Marks
Question 5 Based on UNIT 5		
Q – 5 (A)	Objective type questions	4 Marks
Q – 5 (B)	Answer in brief (Any 1 out of 2)	2 Marks
Q – 5 (C)	Answer in detail (Any 1 out of 2)	3 Marks
Q 1 (D)	Write a note on (Any 1 out of 2)	5 Marks
TOTAL MARKS : 70; TOTAL TIME : 2½ HOURS		

Total Scheme of evaluation

Semester	Theory			Practical		
	Internal	External	Total	Internal	External	Total
I	30	70	100	15	35	50
II	30	70	100	15	35	50

Minimum requirements of plant material and Instruments for Botany Practical based on Paper B-101 and Paper B-201

- Use of one micro scope for two students in practical batch
- Fresh plant material as well preserve material as per syllabus
- Different types of stain for slide preparation
- Charts for life cycles
- Original plant / Photographs / charts for Medicinal plants.
- Different types of stain for slide preparation
- Paper chromatography chamber and their equipment's & Chemicals
- Twig of plant and charts for Families

SAURASHTRA UNIVERSITY, RAJKOT

Faculty of Science

Course structure and Unique Code

Syllabus of Semester – I & II (F.Y. B.Sc.) Botany

Effective from June 2016

No	Course	Sem	Paper name	Paper No.	Credit	Unique Code No of Paper						
						Year	Faculty	Subject	Level	Sem	Paper NO.	Option
01	UG	I	Plant Diversity	B - 101	06	16	03	03	01	01	01	00
02	UG	II	Angiosperms, Tools and Techniques in Botany, Biochemistry and Genetics	B - 201	06	16	03	03	01	02	02	00

Semester - I

Paper – B-101: Plant Diversity

Unit-1: Introductory Botany and Algae **0.8 Credit** **(12 Lectures)**

- 1.1 Scope and objectives of Botany
- 1.2 Branches of Botany
- 1.3 Classification: Whittaker (Five Kingdom)
- 1.4 General characters, Smith's classification and Algae in human welfare.
- 1.5 Life history of *Spirogyra* (Chlorophyceae), *Sargassum* (Phaeophyceae) (Excluding development)

List of Reference Books:

- 1) Smith, G. M. (1955). *Cryptogamic Botany Vol. I Algae and Fungi*. Tata McGraw hill Publishing Company Ltd., New Delhi. 2nd edition.
- 2) Singh, V., Pande, P. C., Jain, D. K.. (2014). *A Text Book of Botany*. Rastogi Publications, Meerut, New Delhi. 5th revised edition.
- 3) Singh, V., Pande, P. C., and Jain. D. K. (2015). *A Text book of botany*. Rastogi publications, Meerut, New Delhi. 4th edition.
- 4) Vashishta, B.R. (1987). *Botany for degree students - Algae*. S. Chand and company (Pvt.) Ltd Ram Nagar-New Delhi. 7th edition.
- 5) Anne. Regaed. , Kumaresan, V., Arumugam, N. (2014) *Algae*. Saras publication, Kattar P.O. Nagercoil, Tamilnadu. 1st edition.
- 6) Gangulee, H. C., Das, K. S., Dutta, C. (2005). *College Botany Volume – 1*. New Central Book Agency, India 1st edition.

Unit –2: Fungi **0.8 Credit** **(12 Lectures)**

- 3.1 General characters, Alexopolus' classification and fungi in human welfare.
- 3.2 Life history of *Mucor* (Zygomycotina), *Agaricus* (Bacidiomycotina) (Excluding development)

List of Reference Books:

- 1) *Smith, G. M. (1955). Cryptogamic Botany Vol. I Algae and Fungi. Tata McGraw hill Publishing Company Ltd., New Delhi. 2nd edition.*
- 2) *Singh, V., Pande, P. C., Jain, D. K... (2014). A Text Book of Botany. Rastogi Publications, Meerut, New Delhi. 5th revised edition.*
- 3) *Singh, V., Pande, P. C., and Jain. D. K. (2015). A Text book of botany. Rastogi publications, Meerut, New Delhi. 4th edition.*
- 4) *Vashishta, B.R., Sinha, A.K. (2002). Botany for degree students. Fungi- S.Chand.*
- 5) *Alexopoulos, C.J., Mims, C.W., Blackwell, M. (1996). Introductory Mycology, John Wiley and Sons (Asia), Singapore. 4th edition.*

Unit – 3: Bryophyte

0.8 Credit (12 Lectures)

- 4.1 General account and outline of classification of bryophytes by Rothmaller up to class
- 4.2 Life history of *Riccia* (Excluding development)

List of Reference Books:

- 1) *Smith, G. M. (1955). Cryptogamic Botany Vol. I Bryophytes and Pteridophytes. Tata McGraw hill Publishing Company Ltd., New Delhi. 2nd edition.*
- 2) *Singh, V., Pande, P. C., Jain, D. K... (2014). A Text Book of Botany. Rastogi Publication, Meerut, New Delhi. 5th revised edition.*
- 3) *Singh, V., Pande, P. C., and Jain. D. K. (2015). A Text book of botany. Rastogi publication, Meerut, New Delhi. 4th edition.*
- 4) *Parihar, N.S. (1991). An introduction to Embryophyta. Vol. I. Bryophyta. Central Book Depot, Allahabad.*

Unit – 4: Pteridophyte

0.8 Credit (12 Lectures)

- 5.1 Origin, Evolution and Phylogeny of Land plants (General Account) with Geological time scale.
- 5.2 General accounts and outline of classification of Pteridophytes by G.M. Smith up to class
- 5.3 Life history of *Nephrolepis* (Excluding development)

List of Reference Books:

- 1) *Smith, G. M. (1955). Cryptogamic Botany Vol. I Bryophytes and Pteridophytes. Tata McGraw hill Publishing Company Ltd., New Delhi. 2nd edition.*
- 2) *Singh, V., Pande, P. C., Jain, D. K... (2014). A Text Book of Botany. Rastogi Publications, Meerut, New Delhi. 5th revised edition.*
- 3) *Singh, V., Pande, P. C., and Jain. D. K. (2015). A Text book of botany. Rastogi publications, Meerut, New Delhi. 4th edition.*
- 4) *Vashishta, P.C., Sinha, A.K., Kumar, A., (2010). Pteridophyta, S. Chand. Delhi, India.*
- 5) *Parihar, N.S. (1991). An introduction to Embryophyta. Vol. I. Pteridophyta. Central Book Depot, Allahabad.*

Unit – 5: Gymnosperm**0.8 Credit (12 Lectures)**

- 6.1 General characters, outline of classification by GM Smith and characters of gymnosperms classes
- 6.2 Life history of *Cycus* (Excluding development)

List of Reference Books:

- 1) *Singh, V., Pande, P. C., Jain, D. K... (2014). A Text Book of Botany. Rastogi Publications, Meerut, New Delhi. 5th revised edition.*
- 2) *Singh, V., Pande, P. C., and Jain. D. K. (2015). A Text book of Botany. Rastogi publications, meerut, New Delhi. 4th edition.*

Practical based on Paper B-101

- 1) Study of morphology, anatomy and reproductive structures in *Spirogyra* algae
- 2) Study of morphology, anatomy and reproductive structures in *Sargassum* algae
- 3) Study of morphology, anatomy and reproductive structures in Fungi : *Mucor*
- 4) Study of morphology, anatomy and reproductive structures in Fungi : *Agaricus*
- 5) Study of morphology, anatomy and reproductive structures in *Riccia*
- 6) Study of morphology, anatomy and reproductive structures in *Nephrolepis*
- 7) Study of morphology, anatomy and reproductive structures in *Cycus*
- 8) To study the Medicinal plants: *Vitex negundo*; *Cassia fistula*; *Terminalia belerica*; *Emblica officinalis*; *Pongamia pinnata*
- 9) Field study / Study Tour

List of Reference Books:

- 1) *Bendre, A. M. and Ashok Kumar, (2009) A Text book of Practical Botany Vol. I & II. Rastogi Publications, Meerut. 9th edition.*