Krantiguru Shyamji Krishna Verma

**Kachchh University**

Mundra Road

**BHUJ : 370 001**

SYLLABUS ( CBCS )

**B. Sc. Semester III**

Botany

Code : USCEBO – 303, USCEBO - 304

With effect from June 2016

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**KSKV Kachchh University, Bhuj - Kachchh**

Botany Syllabus as CBCS System

**Semester III** (w.e.f. June 2016)

Name of the Course: **Cryptogamic Botany**

Code: **USCEBO - 303**

**Unit – 1 Algae [ 15 Marks]**

A Classification (As per G.M. Smith)

B Habitat, Habit and life histories of following algae (Excluding Development)

1. Chlorophyta : Oedogonium
2. Phaeophyta : Ectocarpus
3. Rhodophyta : Batrachospermum

**Unit – 2 Fungi [ 15 Marks]**

A Classification (As per Anisworth)

B Habitat, Habit and life histories of following fungi (Excluding Development)

1. Ascomycotina : Claviceps
2. Basidiomycotina : Puccinia

C Types of Lichen

**Unit – 3 Bryophytes [ 15 Marks]**

A Classification (As per G.M. Smith)

B Habitat, Habit and life histories of following bryophytes (Excluding Development)

1. Anthocerotaceae: Anthoceros
2. Musci: Funaria

**Unit – 4 Pteridophytes [ 15 Marks]**

A Classification(As per G.M. Smith)

B Habitat, Habit and life histories of following Pteridophytes (Excluding Development)

1. Calamophyta: Equisetum
2. Pterophyta: Adiantum

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**Semester III** (w.e.f. June 2016)

Name of the Course: **Cryptogamic Botany**

Code: USCEBO **- 303 [PRACTICAL]**

1 Oedogonium: Mounting of vegetative thallus, Cap cell, Macrandrous Antheridia,

Oogonium, Dwarf male (Nannandrium) + permanent slides

2 Ectocarpus: Mounting of Thallus, Uni & Plurilocular sporangia + permanent slides

3 Batrachospermum: Mounting of vegetative thallus, Cystocarp. Permanent slides of Antheridia, Archegonia & Cystocarp

4 Claviceps: Mounting of Conidia, Permanent slides of Claviceps Ascogonium (Stroma) VS, Ascospore, Specimen of Ergot

5 Puccinia: Mounting of Uredospore and Teleutospore, Permanent slides of Uredospore, Teleutospore (Teliospore), Pycniospore (Spermatiospore / Spermatia) and aecidiospore.

6 Anthoceros: Specimen of Thallus, Sporophyte TS; Permanent slides or charts of V.S. of thallus, Reproductive organs, LS of Sporophyte

7 Funaria:- Mounting of Antheridia, Archegonia, Peristomial teeth.

Specimen:- Funaria gametophyte with sporophyte

Permanent slides of Antheridia, Archegonia, Sporophyte LS

8 *Equisetum:* Specimen of sporophytic plant

Permanent slides: *Equisetum* cone L.S. & T.S.

Mounting of *Equisetum* spores from cone.

*9 Adiantum*: Specimen of sporophytic plant

Permanent slide of T.S. Passing through sori of *Adiantum* leaflet, Mounting of sporangia of *Adiantum*

**Suggested Readings:**

(i) Practical Botany Vol. I by Bendre & Kumar, Rastogi publication.

**Tolani College of Arts & Science, Adipur - Kachchh**

S.Y. B.Sc. (Botany), CBCS System

**Semester III** (w.e.f. June 2016) **Botany: USCEBO - 303**

**Internal Practical Exam**

Total Marks: 20 Time:- 6 Hours

**Session-I**

**Total Marks: 10 Time: 3 Hours**

Ex.1 Identify and classify with reasons Specimen **A** and **B**  04

Ex.2 Identify and describe peculiarities of given specimen **C** and **D** 03

Ex.3 Viva voce 02

**Session-II**

**Total Marks: 10 Time: 3 Hours**

Ex.4 Expose the reproductive organ from given specimen **E**. Prepare the temporary

 slide and show it to the examiner. 04

Ex.5 Identify and describe the specimens / slides **F** & **G** 03

Ex.6 Project Report and/ or Submission 02

Ex.7 Journal 02

**KSKV Kachchh University, Bhuj - Kachchh**

S.Y. B.Sc. (Botany) Syllabus as CBCS System

**Semester III** (w.e.f. June 2016) **Botany: USCEBO - 303**

**External Practical Exam**

Total Marks: 30 Time:- 6 Hours

**Session-I**

**Total Marks: 15 Time: 3 Hours**

Ex.1 Identify and classify with reasons Specimen **A** and **B**  05

Ex.2 Identify and describe peculiarities of given specimen **C** and **D** 05

Ex.3 Viva voce 05

**Session-II**

**Total Marks: 15 Time: 3 Hours**

Ex.4 Expose the reproductive organ from given specimen **E**. Prepare the temporary

 slide and show it to the examiner. 04

Ex.5 Identify and describe the specimens / slides **F** & **G** 04

Ex.6 Project Report and/ or Submission 04

Ex.7 Journal 03

**KSKV Kachchh University, Bhuj - Kachchh**

B.Sc. (Botany) Syllabus as CBCS System

**Semester III** (w.e.f. June 2016)

Name of the Course: **Gymnosperms, Systematic Botany & Cyto-genetics**

Code: **USCEBO - 304**

**Unit – 1 Gymnosperms [ 15 Marks]**

A Classification(As per Chamberlain)

B Habitat, Habit, Anatomy (Secondary structure of Stem-RLS, TLS & Needle) and life histories of following Gymnosperm. (Development of organs are excluded)

**Pinus**

**Unit – 2 Systematic Botany [ 15 Marks]**

**A Morphology**

1. Aestivation
2. Buds (Types & modifications)
3. Adhesion & Cohesion in flower

**B Taxonomy :**

Outline classification of following families according to Bentham and Hooker’s classification system. General characters, floral structure, floral diagram, floral formula, common examples of economic and ethnobotanical important of plants of following families.

1. Polypetalae : Cruciferae , Caesalpiniaceae
2. Gamopetalae : Rubiaceae, Convolvulaceae
3. Monochlamydeae : Euphorbiaceae
4. Monocot: Poaceae, Palmae

**Unit-3 Cell biology: [ 15 Marks]**

1. Difference between Prokaryotic and Eukaryotic cell [Self Learning]
2. U.S. of Eukaryotic plant cell [Self Learning]
3. U.S. of Plant cell wall
4. U.S. of ER
5. U.S. of Plasma membrane and its various models
6. Microbodies (Peroxisome, Glyoxisome)
7. Cytoskeleton

**Unit – 4 Genetics: [ 15 Marks]**

1. Mendelian genetics
2. Mono & Di-hybrid ratio
3. Interaction of genes: Complementary Supplementary genes.
4. Cytoplasmic inheritance (*Mirabilis jalapa*)
5. Sex determination in plants

**KSKV Kachchh University, Bhuj - Kachchh**

Botany Syllabus as CBCS System

**Semester III** (w.e.f. June 2016)

Name of the Course : **Gymnosperms, Systematic Botany & Cyto-genetics**

Code: **USCEBO - 304 [PRACTICAL]**

1. Study of Pinus:

- Mounting of Pollengrain

- T.S. of Pinus needle.

- Specimens: Male cone, Female cone, Needle

- Permanent slides: Ovule, Needle, male cone L.S.

1. Study of Aestivation (As per Theory)
2. Study of Buds (Types & modifications) (As per Theory)
3. Study of Adhesion & Cohesion in flower (As per Theory)
4. Study of Cruciferae
5. Study of Caesalpiniaceae
6. Study of Rubiaceae
7. Study of Convolvulaceae
8. Study of Euphorbiaceae
9. Study of Poaceae
10. Study of Palmae
11. Study through Model / Chart / Computer (Picture/ Photograph)
12. U.S. of Plant cell
13. U.S. of Plant cell wall
14. U.S. of Plant cell ER
15. U.S. of Plasma membrane
16. Microbodies (Peroxisome, Glyoxisome)
17. Cytoskeleton

13 Study through Model / Chart / Computer (Picture/ Photograph) as per syllabus

 Mono & Dihybrid ratio, Complementary Supplementary genes

14 Cytoplasmic inheritance in Mirabilis

15 Male sterility in Maiz

**Suggested Readings:**

1. Practical Botany vol. I & II By Bendre and Kumar, Rastogi publication

**Tolani College of Arts & Science, Adipur - Kachchh**

S.Y. B.Sc. (Botany) Syllabus as CBCS System

**Semester II** (w.e.f. June 2016) **Botany: USCEBO - 304**

**Internal Practical Exam**

Total Marks: 20 Time:- 6 Hours

**Session-I**

**Total Marks: 10 Time: 3 Hours**

Ex.1 Identify and Expose reproductive structure of given Specimen **A** 03

Ex.2 Identify and classify giving general characters of the given family from

specimen **B** 02

Ex.3 Identify and describe morphology of C & **D** 03

Ex.4 Viva voce 02

**Session-II**

**Total Marks: 10 Time: 3 Hours**

Ex.5 Identify and describe specimen E, **F & G** 06

Ex.6 Project or Submission 02

Ex.7 Journal 02

**KSKV Kachchh University, Bhuj**

S.Y. B.Sc. (Botany) Syllabus as CBCS System

**Semester II** (w.e.f. June 2016) **Botany: USCEBO - 304**

**External Practical Exam**

Total Marks: 30 Time:- 6 Hours

**Session-I**

**Total Marks: 15 Time: 3 Hours**

Ex.1 Identify and Expose reproductive structure of given Specimen **A** 05

Ex.2 Identify and classify giving general characters of the given family from

specimen **B** 05

Ex.3 Identify and describe morphology of C & **D** 04

Ex.4 Viva voce 03

**Session-II**

**Total Marks: 15 Time: 3 Hours**

Ex.5 Identify and describe specimen E, **F & G** 06

Ex.6 Project or Submission 04

Ex.7 Journal 03