

GOA UNIVERSITY
Taleigao Plateau, Goa 403 206

UPDATED FINAL AGENDA

For the 6th Adjourned Meeting of the

IX ACADEMIC COUNCIL

Day & Date

13th September 2017

Time

2.30 p.m.

Venue
COUNCIL HALL
Administration Block

	<p>that it was not a good practice to change the eligibility through a Circular/Notification instead of amending the Ordinance.</p> <p>The Academic Council requested the Department to conduct a workshop involving all stakeholders in order to raise awareness of the importance of Mathematics as a branch of learning, a basic life skill and foundation of knowledge in all streams. It was decided to set up a Committee to facilitate developing SWAYAM Courses in the University.</p> <p style="text-align: right;">(Action: AR-PG)</p>
D 3.6	<p>Minutes of the meeting of Board of Studies in Mathematics held on 10/08/2017.</p> <p>The Academic Council approved the minutes of the meeting of Board of Studies in Mathematics held on 10/08/2017 with the exception of Part B of the minutes which will be subject to the decision on the Report of the Committee on setting up of common Question Papers under Ordinance OC – 66. It was informed to change the title under Semester III at page 70 of the annexures.</p> <p style="text-align: right;">(Action: AR-PG)</p>
D 3.7	<p>Minutes of the meeting of Board of Studies in Physical Education held on 18/08/2017.</p> <p>The Academic Council approved the minutes of the meeting of Board of Studies in Physical Education held on 18/08/2017 with the following observations:</p> <ol style="list-style-type: none"> 1. Yoga to be indicated as a physical activity instead of a game. 2. Kabaddi and Kho-Kho to be shown as separate games. 3. Volleyball to be written as a single word. <p style="text-align: right;">(Action: AR-PG)</p>
D 3.8	<p>Minutes of the meeting of Board of Studies in Botany held on 21/08/2017.</p> <p>The Academic Council approved the minutes of the meeting of Board of Studies in Botany held on 21/08/2017.</p> <p style="text-align: right;">(Action: AR-PG)</p>
D 3.9	<p>Minutes of the meeting of Board of Studies in Zoology held on 07/08/2017 & 16/08/2017.</p> <p>The Academic Council approved the minutes of the meeting of Board of Studies in Zoology held on 07/08/2017 & 16/08/2017 except Annexure II on Modifications which require to be referred back to the Board.</p> <p>The Chairperson was informed to identify the practical component and place the same for the approval of the Vice-Chancellor which would be placed as a Reporting item before the Standing Committee of the Academic Council.</p> <p>It was also informed that pending finalization of the minutes, the syllabus to be circulated to all the Colleges.</p> <p style="text-align: right;">(Action: AR-PG)</p>

	<p>The following important points/recommendations of BoS (points to be highlighted) may be considered for the approval of the Academic Council as mentioned below:</p> <ul style="list-style-type: none"> i) Shortfall of two credits in B.P.Ed Syllabus ii) Modification of the B.P.Ed Syllabus for the 2nd and 4th Semester <p>Date : 22nd August 2017 Place : Ponda, Goa</p> <p style="text-align: right;">(Dr. Allan Abreo) Signature of the Dean</p> <p style="text-align: right;">(Back to Index)</p>
D 3.8	<p>Minutes of the meeting of Board of Studies in Botany held on 21/08/2017</p> <p>Part A</p> <ul style="list-style-type: none"> i. Recommendations regarding courses of study in the subject or group of subjects at the undergraduate level: Nil <p>AOB: BoS initiated identification of Online Courses for Colleges under SWAYAM Programme.</p> <ul style="list-style-type: none"> ii. Recommendations regarding courses of study in the subject or group of subjects at the postgraduate level: Two Core papers viz., BOC-413: Fungal Biodiversity, Bioprospecting and Biotechnology and BOC-414: Lab in Fungal Biodiversity, Bioprospecting and Biotechnology has been replaced by the existing optional papers BOO-312: Plant Biotechnology (3 Credits) and BOO-313: Lab in Plant Biotechnology (1 credit) which are now coded as BOC- 413: Plant Biotechnology (3 credits) and BOC-414: Lab in Plant Biotechnology (1 credit). The earlier two Core papers viz., BOC- 413: Modern Concepts in Plant Ecology and BOC-414: Lab in Modern Concepts in Plant Ecology now being optional papers are coded as BOO-435: Modern Concepts in Plant Ecology and BOO-436: Lab in Modern Concepts in Plant Ecology. <p>Annexure I (refer page no 99)</p> <p style="text-align: center;">Part B</p> <ul style="list-style-type: none"> i. Scheme of Examinations at undergraduate level: Model question paper of Semester I Practical SEA for Core paper I was prepared along with the Key. <p>Panel of examiners for different examinations at the undergraduate level: Revised and updated.</p> <ul style="list-style-type: none"> ii. Scheme of Examinations at postgraduate level: Nil iii. Panel of examiners for different examinations at post-graduate level: Nil

Part C.

- i. Recommendations regarding preparation and publication of selection of reading material in the subject or group of subjects and the names of the persons recommended for appointment to make the selection: **Nil**

Part D

- i. Recommendations regarding general academic requirements in the Departments of University or affiliated colleges: **Nil**
- ii. Recommendations of the Academic Audit Committee and status thereof: **Nil**

Part E.

- i. Recommendations of the text books for the course of study at undergraduate level: **Nil**
- ii. Recommendations of the text books for the course of study at post graduate level: **Nil**

Part F.

Important points for consideration/approval of Academic Council

- i. The important points/recommendations of BoS that require consideration/approval of Academic Council (points to be highlighted) as mentioned below
 - a. **Model question papers for Core and Generic Elective have been revised and submitted for approval. Also, model question paper of Semester I Practical SEA for Core paper I along with the Key is submitted for approval.**
 - b. **Revised Master Panel of examiners for UG courses be approved.**
 - c. **The Core papers viz., BOC- 413: Plant Biotechnology (3 credits) and BOC-414: Lab in Plant Biotechnology (1 credit) be approved.**
 - d. **The code numbers of optional papers viz., BOO-435: Modern Concepts in Plant Ecology and BOO-436: Lab in Modern Concepts in Plant Ecology be approved.**
- ii. The declaration by the chairman that the minutes were readout by the Chairman at the meeting itself.

Date: 21.08.2017

Place: Goa University
Chairman

(Prof. Vijaya Kerkar)
Signature of the

Part G. The Remarks of the Dean of the Faculty

- i) The minutes are in order
- ii) The minutes may be placed before the Academic Council with remarks if any.
- iii) May be recommended for approval of Academic Council.
- iv) Special remarks if any.

	Date: Place (Prof. M.K. Janarthanam) Signature of the Dean
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D 3.9	<p>Minutes of the meeting of Board of Studies in Zoology held on 07/08/2017 & 16/08/2017</p> <p><u>Part A</u></p> <p>1. Recommendations regarding courses of study in the subject or group of subjects at the undergraduate level:</p> <p>Modalities for the implementation of the part amendment to OC-66 as per the University Circular No.2/403/2016-Legal(Vol.XII)/561 dated 29th May 2017 towards the B.Sc. Programme offered under the CBCS were discussed at length. Accordingly, the overall programme structure/ framework of the course involving the papers / courses to be taught to the B.Sc. (Zoology) (General and Honours) students for all the six semesters under different categories such as Core Courses, Elective Courses, Discipline Specific Elective Courses and Skill Enhancement Courses were formulated. Detailed syllabi for the first two years were also finalized. Annexure I (refer page no 102)</p> <p>A detailed review of the recently implemented syllabus of the first year B.Sc. (CBCS Scheme) was undertaken and few modifications are recommended to the papers, viz. ZOCC1 (Diversity of Non-Chordates and Cell Biology) of Ist Semester and ZOCC2 (Diversity of Chordates and Genetics) of the IInd semester of the Academic year 2017-18 (Annexure II).</p> <p>2. Recommendations regarding courses of study in the subject or group of subjects at the PG level: NA</p> <p>3. Recommendations regarding courses of study in the subject or group of subjects at the M. Phil / Ph.D. level and the eligibility of admission: NA</p> <p><u>Part B</u></p> <p>I. The scheme of examinations at Under Graduate level : NA</p> <p>II. PANEL of Examiners for various examinations at the U.G. level: In the light of superannuation of several senior teachers and in order to update the Master Panel for the Board of Examiners for the Vth and VIth semesters, the DC recommended to procure the new list of teachers from the UG colleges who are engaged in teaching various courses of the Vth and VIth semesters of B.Sc. (Zoology) programme.</p> <p>III. Scheme of examination at P.G. level: NA</p> <p>IV. Panel of examiners at P.G. level:</p>

D 3.8 Minutes of the meeting of Board of Studies in Botany held on 21/08/2017**Annexure I****BOC-413: Plant Biotechnology**
(3 Credits Theory)**Syllabus:**

- 1. Plant Tissue Culture:** Totipotency; A brief history of plant tissue culture; chronology of important developments in plant tissue culture; General Techniques; Laboratory Organisation; Media Composition and Preparation, Aseptic Manipulation; Cell Cultures (including Bergmann's plating technique); Application of cell culture (Mutant selection, production of secondary metabolites, transformations). **(8h)**
- 2. Applications of Plant cell, tissue and organ cultures:** Applications in agriculture – improvement of hybrids, encapsulated cells, production of disease and stress resistant plants. Applications in horticulture and Forestry – Micropropagation, *in vitro* establishment of Mycorrhiza; Applications in industries – Secondary metabolites from cell cultures, from immobilized plant cells. **(6h)**
- 3. Micropropagation and somaclonal variation:** Clonal propagation or micropropagation; Mechanism of somaclonal variation, Role of somaclonal variation in plant breeding; Applications. **(4h)**
- 4. Germplasm conservation:** Modes of Conservation, significance; Cryopreservation: Cryopreservation of plant stock cells - Methods of cryopreservation, cryobank, Pollen bank; Prospects in agricultural and forest biotechnology. **(5h)**
- 5. Production and uses of Haploids:** Production of haploids (anther culture, ovule culture, bulbosum technique), detection of haploids (morphology, genetic markers); uses of haploids; Pollen as a tool in crop improvement; Pollen storage; Effect of radiation on pollen. **(6h)**
- 6. Protoplast culture, regeneration and somatic hybridization:** Isolation of protoplasts, Purification of protoplasts, viability and plating density of protoplast; protoplast culture and regeneration of plants; protoplast fusion and somatic hybridization, Cytoplasmic hybrids or hybrids, genetic modification of protoplasts. **(6h)**
- 7. Transgenic Plants:** Selectable marker genes and their use in transformed plants; Transgenic plants for crop improvement; Molecular farming from transgenic plants; transgenic plants to study regulated gene expression; Bioethics in plant genetic engineering. **(3h)**
- 8. Gene transfer methods in plants:** Target cells for transformation, vector for gene transfer. *Agrobacterium* mediated gene transfer; selectable and scorable markers (reporter genes), agroinfection and gene transfer, DNA mediated gene transfer (DMGT); Methods of direct gene transfer. **(3h)**
- 9. Application of Biotechnology in Agriculture, Forest and human welfare:** Marker assisted selection (MAS); Biofertilizers (Microbial bioinoculants); Biopesticides; Environmental biotechnology; Enzyme biotechnology. **(4h)**

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BOC-414: Lab in Plant Biotechnology
(1 Credit - any 15 practicals)

1. Familiarizing with various physical and chemical sterilization techniques.
 2. Preparation of solid and liquid nutrient media.
 3. Preparation of explants, inoculation and callus development.
 4. Study of callus morphology.
 5. Technique of sub culturing the callus.
 6. Preparation of differentiation media.
 7. Inoculation of the callus on differentiation media and regeneration of explants.
 8. Embryo culture.
 9. Seed culture.
 10. Preparation of media for anther/pollen culture and inoculation.
 11. Preparation of cell suspension cultures.
 12. Study of cell viability methods.
 13. Isolation of protoplast.
 14. Study of protoplast viability.
 15. Root organ culture (ROC) technique.
 16. Preparation of synthetic seeds (alginate beads).
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B.Sc. (Botany) Semester end Examination, October/April 2017-18**Paper: Core/Generic Elective**

Duration: 2 Hours

Total Marks: 80

Instructions: Draw diagrams wherever required.

- Q. 1 Answer **any six** of the following (out of 8): (6 x 2 = **12**)
- Q. 2 Answer **any five** of the following (out of 7): (5 x 4 = **20**)
- Q. 3 A. or A (Any one of the two) (1 x 6 = **06**)
- Q. 3 B. (1 x 6 = **06**)
- Q. 4 A. or A (Any one of the two) (1 x 6 = **06**)
- Q. 4 B. (1 x 6 = **06**)
- Q. 5 A. or A (Any one of the two) (1 x 6 = **06**)
- Q. 5 B. (1 x 6 = **06**)
- Q. 6 A. or A (Any one of the two) (1 x 6 = **06**)
- Q. 6 B. (1 x 6 = **06**)
-

B.Sc. (Botany) Semester end Examination, October/April 2017-18**Paper: Core (to be deleted)**

Duration: 2 Hours

Total Marks: 80

Instructions: Draw diagrams wherever required.

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- Q. 1 Answer **any five** of the following (out of 7): (5 x 2 = **10**)
Q. 2 Answer **any five** of the following (out of 7): (5 x 2 = **10**)
Q. 3 A. or A (Any one for the two) (1 x 5 = **05**)
Q. 3 B. (1 x 5 = **05**)
Q. 4 A. or A (Any one for the two) (1 x 5 = **05**)
Q. 4 B. (1 x 5 = **05**)
Q. 5 A. or A (Any one for the two) (1 x 5 = **05**)
Q. 5 B. (1 x 5 = **05**)
Q. 6 A. or A (Any one for the two) (1 x 5 = **05**)
Q. 6 B. (1 x 5 = **05**)
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B.Sc. (Botany) Practical Examination

Paper- BCC –I (Biodiversity – I)

Key / Marking scheme

Max. Marks: 50

Duration :3hrs

- | | |
|---|-----------------|
| Q.1. | (4X3 =12 marks) |
| 1 mark –Identification, | |
| 1 mark- Classification | |
| 2 marks – Description | |
| Q.2. 2 marks - Slide preparation | (04) |
| 2 marks – Procedure (flow chart) | |
| Q.3. 2 marks - Slide preparation | (04) |
| 2 marks – procedure (flow chart) | |
| Q.4. 1 mark - Identification | (5x2=10) |
| 1 mark – Description | |
| Q.5.Viva. (Questions related to practical syllabus) | (10) |
| Q.6. Journal | (10) |
| (Student should submit - Neat, Clean and certified journal) | |

B.Sc. (Botany) Practical Examination

Paper- BCC –I (Biodiversity – I)

Max. Marks - 50

Duration: 3hrs

- | | |
|---|------|
| | Q.1. |
| Identify, Classify and describe specimen A, B and C giving reasons. | (12) |
| Q.2. From the bacterial culture provided prepare the slide with the help of Monochrome staining/ Gram staining technique and show the slide to the examiners. | (04) |
| Q.3. Preparation of endomycorrhizal slide from the given material D. | (04) |
| Q.4. Identify and describe specimens/slides/model/photograph /preparations E , F G, H, and I | (10) |
| Q.5.Viva. | (10) |
| Q.6. Journal | (10) |

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