GOA UNIVERSITY

Taleigao Plateau, Goa 403 206

M I N U T E S

of the 7th Meeting of the

IX ACADEMIC COUNCIL

Day & Date

6th December 2017

Time

10.30 a.m.

Venue

COUNCIL HALL
Administration Block

	Management Studies held on 17/08/2017. **(Action: AR-PG)**
D 3.7	**Minutes of the meeting of Board of Studies in Allied Health Sciences held on 04/11/2017.** The Academic Council approved the minutes of the meeting of Board of Studies in Allied Health Sciences held on 04/11/2017. **(Action: AR-PG)**
D 3.8	**Minutes of the meeting of Board of Studies in Education held on 02/08/2017.** The Academic Council approved the minutes of the meeting of Board of Studies in Education held on 02/08/2017. The Chairperson of the Board of Studies was requested to carry out formatting in the annexure. **(Action: AR-PG)**
D 3.9	**Minutes of the meeting of Board of Studies in English held on 15/11/2017.** The Academic Council did not approve the minutes of the meeting of Board of Studies in English held on 15/11/2017. The Chairperson of the Board of Studies was requested to rework on the distribution of hours and marks across the syllabus and also indicate standardized Bibliography style including the year of publication for all the courses. **(Action: AR-PG)**
D 3.10	**Minutes of the meeting of Board of Studies in Microbiology held on 21/11/2017.** The Academic Council approved the Minutes of the meeting of Board of Studies in Microbiology held on 21/11/2017. **(Action: AR-PG)**
D 3.11	**Minutes of the meeting of Board of Studies in Biochemistry held on 23/11/2017.** The Academic Council approved the minutes of the meeting of Board of Studies in Biochemistry held on 23/11/2017. **(Action: AR-PG)**
D 3.12	**Minutes of the meeting of Board of Studies in History held on 07/11/2017.** The Academic Council approved the Minutes of the meeting of Board of Studies in History held on 07/11/2017 except for Part E. The Chairperson of the Board of Studies informed that a Sub-Committee is being constituted to review the Syllabus recommended under Part E and the same would be placed before the Academic Council in its next meeting. The Academic Council decided to accept the recommendations but decided to keep it on hold until the Board's final recommendation on the syllabus. The Academic Council also resolved to accept the recommendation of the Board for a separate undergraduate Board of Studies in History. However, the Chairpersons of both Boards (or their nominees) shall be Ex-officio members of the other Board of Studies. The Academic Council suggested that the composition of the Boards need to be reviewed to include members from the industry as well as alumni. It was also decided to examine the possibility of having representatives of the State Board on the

	(ii) The minutes may be placed before the Academic Council with remarks if any. (iii) Recommended for approval of Academic Council. (iv) Special remarks if any. Sd/- **(Prof. M.K. Janarthanam)** **Date : 24/11/2017** **Signature of the Dean** **Place: Office of Dean,** **Faculty of Life Science and Environment** **Faculty of Life Science & Environment** (Back to Index)
D 3.11	**Minutes of the meeting of Board of Studies in Biochemistry held on 23/11/2017.** **Part A** **(i) Recommendations regarding courses of study in the subject or group of subjects at the under-graduate level.** Not in the Agenda of this meeting **(ii) Recommendations regarding courses of study in the subject or group of subjects at the Post-graduate level-** Merging of 5 Practical Core Courses, each of 1 Credit, into 1 Practical Core Course of 5 Credits, in Semester 1 and in Semester 2, in M. Sc. Biochemistry Programme, along with Course Structure. **Annexure I (refer page no 153)** **Part B** (i) **Scheme of examinations at the under-graduate level.** Not in the Agenda of this meeting **(ii) Panel of examiners for different examinations at the under-graduate level.** Not in the Agenda of this meeting **(iii) Scheme of examinations at the post-graduate level.** Not in the Agenda of this meeting **(iv) Panel of Examiners for different examinations at post-graduate level.** Not in the Agenda of this meeting **Part C** (ii) **Recommendations regarding preparation and publication of selection of reading material in any subject or group of subject or group of subjects and names of persons recommended for appointment to make the selection.** Not in the Agenda of this meeting **Part D** **(i) Recommendations regarding general academic requirements in the Departments of University or affiliated colleges**. **--** Not in the Agenda of this meeting **(ii) Recommendations of the Academic Audit Committee and status thereof:**

	Not in the Agenda of this meeting **Part E** **(i) Recommendations of text books for the courses of study at the under-graduate level.** Not in the Agenda of this meeting. **(ii) Recommendations of text books for the courses of study at the post-graduate level.** Not in the Agenda of this meeting Part F **(ii) Important points for consideration and approval of academic council:** The important recommendations of BOS (highlighted) that require approval of academic council ***Merging of 5 Practical Core Courses, each of 1 Credit, into 1 Practical Core Course of 5 Credits, in Semester 1 and in Semester 2, M. Sc. Biochemistry Programme, along with Course Structure.*** ***(Annexure I)*** **The declaration by the Chairman, that the minutes were read out by the Chairman at the meeting itself.** Minutes were read by the Chairperson and confirmed by the members. Sd/- (Prof. Sarita Nazareth) ***Date: 23/11/2017*** ***Signature of the Chairperson*** **Place: Office of Head, Department of Microbiology.** **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) Recommended for approval of Academic Council. (iv) Special remarks if any. Sd/- (Prof. M.K. Janarthanam) **Date : 24/11/2017** **Signature of the Dean** **Place: Office of Dean, Faculty of Life Science and Environment** **Faculty of Life Science & Environment** (Back to Index)
D 3.12	**Minutes of the meeting of Board of Studies in History held on 07/11/2017.** **Part A**. i. Recommendations regarding courses of study in the subject or group of subjects at the undergraduate level:

D 3.11 Minutes of the meeting of Board of Studies in Biochemistry held on 23/11/2017.

Annexure I

CORE COURSES

CODE	COURSE	CREDIT(S) Theory	Practical	Contact Hours
BCC 101-T	Fundamentals of Biochemistry	3	-	45
BCC 102-T	Enzymology	3	-	45
BCC 103-T	Analytical Biochemistry - I	3	-	45
BCC 104-T	Microbes In Health and Disease	3	-	45
BCC 105-T	Biostatistics	3	-	45
BCC 106-P	Practical I	-	5	150
BCC 201-T	Clinical Biochemistry	3	-	45
BCC 202-T	Molecular Biology	3	-	45
BCC 203-T	Analytical Biochemistry - II	3	-	45
BCC 204-T	Immunology- I	2	-	30
BCC 205-T	Hormones	2	-	30
BCC 206-T	Membrane Biochemistry	1	-	15
BCC 207-T	Research Methodology	1	-	15
BCC 208-P	Practical II	-	5	150

OPTIONAL COURSES

CODE	COURSE	CREDIT(S) Theory	Practical	Contact Hours
BCO 101-T	Genetic Engineering [T]	3	-	45
BCO 101-P	Genetic Engineering [P]	-	1	30
BCO 102-T	Nutrition and Food Biochemistry [T]	3	-	45
BCO 102-P	Nutrition and Food Biochemistry [P]	-	1	30
BCO 103-T	Immunology - II [T]	3	-	45
BCO 104-T	Neurochemistry [T]	2	-	30

BCO 105-T	Drug Metabolism [T]	1	-	15
BCO 105-P	Drug Metabolism [P]	-	1	30
BCO 106-T	Biochemistry of Environmental Pollution and Remediation [T]	3	-	45
BCO 106-P	Biochemistry of Environmental Pollution and Remediation [P]	-	1	30
BCO 107-T	Industrial Biochemistry [T]	3	-	45
BCO 107-P	Industrial Biochemistry [P]	-	1	30
BCO 108-T	Frontiers in Biotechnology [T]	3	-	45
BCO 108-P	Frontiers in Biotechnology [P]	-	1	30
BCO 109-T	Bioprospecting [T]	3	-	45
BCO 109-P	Bioprospecting [P]	-	1	30
BCO 110-T	Nanobiotechnology [T]	3	-	45
BCO 110-P	Nanobiotechnology [P]	-	1	30
BCO 111-T	Pharmaceutics [T]	3	-	45
BCO 111-P	Pharmaceutics [P]	-	1	30
BCO 201-P	Study Tour/Field Trip	-	1	30
BCO 202	Training in an Institute/ Industry/ University	-	1	-
BCD 301	Dissertation	-	8	-

Under Optional Courses:

- The theory course is a prerequisite for any practical course.
- Students of M. Sc. Microbiology, Marine Microbiology and Biochemistry Programmes shall be required to take both Theory and Practical Courses under a given Course Title.

Reference material: As given under respective Theory Courses BCC 101-T to BCC 105-T

- BCC 106-P PRACTICAL I

Practical Course Credits: 5 **Contact Hours 150**

Sl.	Topics	Contact Hours
I	**Fundamentals in Biochemistry**	30
	1. Estimation of amino acids (ala, tyr, trp) and protein by spectroscopy.	
	2. Comparison of colorimetric methods for protein estimation – Biuret, Folin-Ciocalteau methods.	
	3. Comparison of methods for reducing sugar estimation –DNSA, Glucose Oxidase	
	4. Estimation of total sugar by anthrone and phenol-sulphuric acid methods	
	5. Estimation of lipid by acid-dichromate method	
	6. Estimation of nucleic acid by direct spectroscopy.	
II	**Enzymology**	30
	1. Assay of enzyme activity, rate of reaction.	
	2. Determination of specific activity.	
	3. Determination of optimal pH for enzyme activity.	
	4. Determination of optimal temperature for enzyme activity.	
	5. Determination of Km, Vmax.	
	6. Purification of enzyme: salting out; dialysis; gel filtration; determination of fold purification, percentage recovery of protein.	
	7. Molecular weight determination by SDS-PAGE.	
III	**Analytical Biochemistry-I**	30
	1.Preparation of buffers, use of pH meter	
	2. Spectrophotometric demonstration of Beer Lambert Law and determination of extinction coefficient	
	3. Visualization of cells – Light, Phase contrast	
	4. Separation of lipids by reverse phase thin layer chromatography	
	5. Column chromatography: Preparation of column, determination of void, bed, dead volume, loading capacity and resolution.	
	6. Measurement of fluorescence by spectrofluorimeter.	
	7. Demonstration of AAS.	
IV	**Microbes in Health and Disease**	30
	1. Gram character of bacteria.	
	2. Bacterial growth curve.	
	3. Growth of bacterial pathogens on selective media.	
	4. Antibiotic sensitivity test for bacterial pathogens.	
	5. Study and identification of fungi.	
V	**Biostatistics**	30
	1.Excel spreadsheet and data analysis	
	2. Linear equation analysis (regression analysis)	
	3. Normal distribution	
	4. Hypothesis testing	
	5. Application of other software (Graphpad) for statistical analysis	

BCC 208-P PRACTICAL II

Practical Course Credits: 5 **Contact Hours: 150**

Sl.	Topics	Contact Hours
I	**Clinical biochemistry**	**30**

1. Blood: Haemoglobin (Hb); Total cell and Differential cell (TC/DC) counts; Erythrocyte sedimentation Rate (ESR); Clotting time; Pressure (using Sphygomanometer).
2. Blood: (a) Glucose; (b) Serum Cholesterol
3. Liver function tests: Serum (a) SGPT; (b) SGOT; (c) Bilirubin
4. Renal function tests: (a) Blood Urea; (b) Serum Creatinine
5. Full urine report: (a) Physical examination: Colour, odour, sediment, crystals; (b) Glucose; albumin

II Molecular biology **30**

1. Isolation of plasmid DNA.
2. Isolation of microbial genomic DNA.
3. PCR amplification of a specific gene.
4. Agarose gel and gel documentation analysis of isolated and amplified DNA to check its size and purity.
5. Demonstration of RT-PCR

III Analytical biochemistry-II **30**

1. Separation of molecules by HPLC.
2. Study of cell and cell components using SEM.
3. Demonstration of: GC, IR, NMR, and Mass/MALDI-TOF, AFM.
4. Elucidation of structure of cellular metabolites using IR, NMR and Mass profiles

IV Immunology-I **30**

1. Blood grouping determination
2. Ouchterlony test
3. Immunodiffusion slide techniques
4. Precipitin and agglutination
5. Widal Test
6. Coomb's Test
7. C-Reactive Protein determination
8. ELISA
9. Rapid Tests [POCTs] for (a) Malarial antigens Pv/Pf; (b) Dengue IgM and IgG antibodies; (c) Hepatitis HBsAg; (d) Human Luteinising hormone
10. Rheumatoid Arthritis Factor determination

V Research Methodology **30**

1. Literature survey on a given research area.
2. Defining a research problem.
3. Designing an experiment with respect to a given objective.
4. Experimental work.
5. Presentation of data.
6. Technical writing.

Reference material: As given under respective Theory Courses BCC 201-T to BCC 205-T

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