

**MINUTES OF 7<sup>th</sup> MEETING OF THE BOARD OF STUDIES IN GEOLOGY**  
**HELD ON MARCH 23, 2018 AT 10:00 a.m.**

Vide Chowgule College notice (F.133C/1776 dated 06/03/2018) a meeting of this Board of Studies (BoS) was convened on March 23, 2018 at 10.00am at the Conference Room, Parvatibai Chowgule College of Arts & Science, Margao – Goa. Since the number of members present represented the Quorum, the BoS began its proceedings.

Minutes are presented in the format.

Members present:

1. Shri Harish S S Nadkarni- Chairman
2. Dr. R. A Duraiswami - Academic Council Nominee
3. Shri Allan Rodrigues- Member
4. Ms Meghana S Devli – Member
5. Mrs Magnolia Aurea Miranda – Member
6. Shri Malcom Lelis Afonso – Member Secretary
7. Shri Akshay Kelkar - Member
8. Shri Kiran Sawant Dessai – Representative from the Industry/Corporate Sector

Members Absent with prior intimation

1. Dr. Hrishikesh Samant – Academic Council Nominee
2. Dr. (Prof.) Mahender Kotha – Nominee of the Vice-Chancellor of Goa University
3. Ms Delia Cardozo – Postgraduate Meritorious Alumnus

Proceedings

The Chairman welcomed the members of the Board of Studies (BoS). The minutes of the previous BoS meeting in Geology held on 03 April 2017 and 04 April 2017 were read out by the Chairman and approved by the members of the board. The Chairman inducted the new member Shri Akshay Kelkar on the board which was unanimously accepted by the members present. The Chairman introduced and explained the agenda for this meeting and Board transacted the following business:

Agenda Items:

1. To approve the revisions proposed in the syllabi of the courses in Geology at Semester I, III and V.
2. Any other Business (A.O.B) with the permission of the Chair.

## **AGENDA 1**

1. To approve the revisions proposed in the syllabi of the courses in Geology at Semesters I, III and V.

### **PART A: Resolutions**

- i. The proposed revised syllabus of B.Sc. Geology was presented and discussed at the meeting. After the following changes the BoS approved the syllabus of the courses for Semester I, III and V.
  - a. During the discussion on the syllabi of the courses, members of the BoS felt the need to modify and rearrange the core and elective courses to be offered. These were approved and a resolution was passed accordingly to bring in the changes. The revised list of core and elective courses for the undergraduate program in Geology at Semester I, III and V is presented in **ANNEXURE I** below.

### **ANNEXURE I**

| Semester | CORE COMPULSORY  |  | CORE ELECTIVES  |  |  |  |
|----------|--|--|---|--|--|--|
| I        | <b>GEL-I.C-1</b><br>Fundamentals<br>of Mineralogy                    | <b>GEL-I.C-2A</b><br>Earth's<br>Dynamics<br>and<br>Tectonics |   |  |  |  |
| III      | <b>GEL-III.C-5A</b><br>Advanced<br>Mineralogy<br>and<br>Geochemistry |  | <b>GEL-III.E-1</b><br>Physical<br>Geology                 | <b>GEL-III.E-2</b><br>Groundwater<br>and<br>Hydrogeology | <b>GEL-III.E-3A</b><br>Ore Genesis             | <b>GEL-III.E-4</b><br>Marine<br>Geology                                      |
| V        | <b>GEL-V.C-7A</b><br>Sedimentary<br>Petrology                        |  | <b>GEL-V.E-9A</b><br>Stratigraphy<br>of India -<br>Part I | <b>GEL-V.E-10</b><br>Petroleum<br>Geology                | <b>GEL-V.E-11A</b><br>Metamorphic<br>Petrology | <b>GEL-V.E-12</b><br>Remote<br>Sensing and<br>Digital<br>Image<br>Processing |

- b. A resolution was passed for a change as under:

#### **SEMESTER I**

1. The core course **GEL-II.C-3** entitled ELEMENTARY PETROLOGY of Semester I was replaced by **GEL-I.C-2: EARTH'S DYNAMICS AND TECTONICS** of Semester II and vice-versa.

#### **SEMESTER III**

2. The core course **GEL-III.C-5** entitled "OPTICAL AND SYSTEMATIC MINERALOGY" was replaced by a new course **GEL-III.C-5A: "ADVANCED MINERALOGY AND GEOCHEMISTRY"**.
3. The elective course **GEL-III.E-3: "ENGINEERING GEOLOGY** (previously offered at Semester III) was replaced by **GEL-IV.E-5: "ORE GENESIS"** (previously offered at Semester IV) with revisions in the course content.

#### **SEMESTER V**

4. The core course **GEL-VI.C-8: "SEDIMENTARY PETROLOGY"** which was previously offered as a core course at Semester VI was shifted to Semester V by replacing core course **GEL-V.C-7: "IGNEOUS PETROLOGY"**.
5. The Elective course **GEL-V.E-9: "STRATIGRAPHY OF INDIA – PART II"** (previously offered at Semester V) was replaced by **"STRATIGRAPHY OF INDIA-PART I"** (previously offered at Semester IV).
6. The Elective Course **GEL-V.E-11 "PRINCIPLES OF GEOPHYSICAL EXPLORATION AND MINING"** (previously offered at Semester V was shifted to Semester VI) was replaced by Elective course **"METAMORPHIC PETROLOGY"** (previously offered at Semester VI)



- c. The proposed revisions in the syllabi of the undergraduate courses for Semesters I, III and V were presented and discussed in the meeting. After incorporating the suggested changes, the BoS approved the revised syllabi of the courses for Semesters I, III and V given below:

| Sr No | COURSE                                      | SEMESTER | Nature of the course |
|-------|---|----------|----------------------|
| 1     | FUNDAMENTALS OF MINERALOGY                  | I        | CORE                 |
| 2     | EARTH'S DYNAMICS AND TECTONICS              | I        | CORE                 |
| 3     | ADVANCED MINERALOGY AND GEOCHEMISTRY        | III      | CORE                 |
| 4     | PHYSICAL GEOLOGY                            | III      | ELECTIVE             |
| 5     | GROUNDWATER AND HYDROGEOLOGY                | III      | ELECTIVE             |
| 6     | ORE GENESIS                                 | III      | ELECTIVE             |
| 7     | MARINE GEOLOGY                              | III      | ELECTIVE             |
| 8     | SEDIMENTARY PETROLOGY                       | V        | CORE                 |
| 9     | STRATIGRAPHY OF INDIA – PART I              | V        | ELECTIVE             |
| 10    | PETROLEUM GEOLOGY                           | V        | ELECTIVE             |
| 11    | METAMORPHIC PETROLOGY                       | V        | ELECTIVE             |
| 12    | REMOTE SENSING AND DIGITAL IMAGE PROCESSING | V        | ELECTIVE             |

The REVISED syllabi of Semesters I, III and V is presented in **ANNEXURE II**

**AGENDA 2:** Any Other Business (AOB)

The following recommendations were made by the BoS:

- i. It was proposed to advise students to select along with core courses a group of elective courses depending upon which profession they would prefer in Geology. The groups proposed were

| Profession                                       | Research/<br>Academic | Geotechnical | Petroleum | Structural | Mining | Environmental | Water<br>Resource |
|--|-----------------------|--------------|-----------|------------|--------|---------------|-------------------|
| <b>Semester I</b>                                | ✓                     |              |           |            |        |               |                   |
| Fundamentals of Mineralogy                       |                       |              |           |            |        |               |                   |
| Earth's Dynamics and Tectonics                   | ✓                     | ✓            | ✓         | ✓          | ✓      | ✓             |                   |
| <b>Semester II</b>                               | ✓                     |              |           |            |        |               |                   |
| Elementary Petrology                             |                       |              |           |            |        |               |                   |
| Principles of Stratigraphy and Paleontology      | ✓                     |              | ✓         |            |        |               |                   |
| <b>Semester III</b>                              | ✓                     |              |           | ✓          |        |               |                   |
| Advanced Mineralogy and Geochemistry             |                       |              |           |            |        |               |                   |
| Physical Geology                                 | ✓                     |              |           |            |        | ✓             |                   |
| Groundwater and Hydrogeology                     |                       |              |           |            |        | ✓             | ✓                 |
| Ore Genesis                                      |                       |              |           | ✓          | ✓      |               |                   |
| Marine Geology                                   |                       |              | ✓         |            |        | ✓             | ✓                 |
| <b>Semester IV</b>                               | ✓                     | ✓            |           | ✓          | ✓      |               |                   |
| Structural Geology                               |                       |              |           |            |        |               |                   |
| Natural Hazards and Management                   |                       |              |           |            |        | ✓             |                   |
| Optical Mineralogy                               | ✓                     |              |           |            |        |               |                   |
| Engineering Geology                              |                       | ✓            |           | ✓          | ✓      |               |                   |
| Geotectonics                                     | ✓                     | ✓            | ✓         | ✓          | ✓      |               |                   |
| <b>Semester V</b>                                | ✓                     | ✓            | ✓         |            |        |               |                   |
| Sedimentary Petrology                            |                       |              |           |            |        |               |                   |
| Stratigraphy of India – Part I                   | ✓                     |              |           | ✓          | ✓      |               |                   |
| Petroleum Geology                                |                       |              | ✓         |            |        |               |                   |
| Metamorphic Petrology                            | ✓                     |              |           |            |        |               |                   |
| Remote Sensing and Digital Image Processing      |                       | ✓            | ✓         | ✓          | ✓      | ✓             | ✓                 |
| <b>Semester VI</b>                               | ✓                     |              |           |            |        |               |                   |
| Igneous Petrology                                |                       |              |           |            |        |               |                   |
| Stratigraphy of India – Part II*                 | ✓                     |              |           |            |        |               |                   |
| Principles of Geophysical Exploration and Mining |                       | ✓            | ✓         | ✓          | ✓      |               |                   |
| Surveying and Field Geology*                     | ✓                     | ✓            | ✓         | ✓          | ✓      | ✓             |                   |
| Rock Structures and Deformation Microstructures  | ✓                     | ✓            | ✓         | ✓          | ✓      |               |                   |

**PART B:** Important Points/ recommendations of BoS that require consideration / approval of Academic Council:

1. The revised syllabi of the following undergraduate courses (detailed in ANNEXURE II)

| Sr No | COURSE                                      | SEMESTER | Nature of the course |
|-------|---|----------|----------------------|
| 1     | FUNDAMENTALS OF MINERALOGY                  | I        | CORE                 |
| 2     | EARTH'S DYNAMICS AND TECTONICS              | I        | CORE                 |
| 3     | ADVANCED MINERALOGY AND GEOCHEMISTRY        | III      | CORE                 |
| 4     | PHYSICAL GEOLOGY                            | III      | ELECTIVE             |
| 5     | GROUNDWATER AND HYDROGEOLOGY                | III      | ELECTIVE             |
| 6     | ORE GENESIS                                 | III      | ELECTIVE             |
| 7     | MARINE GEOLOGY                              | III      | ELECTIVE             |
| 8     | SEDIMENTARY PETROLOGY                       | V        | CORE                 |
| 9     | STRATIGRAPHY OF INDIA – PART I              | V        | ELECTIVE             |
| 10    | PETROLEUM GEOLOGY                           | V        | ELECTIVE             |
| 11    | METAMORPHIC PETROLOGY                       | V        | ELECTIVE             |
| 12    | REMOTE SENSING AND DIGITAL IMAGE PROCESSING | V        | ELECTIVE             |

2. Modification of the course structure of Semester I, III & V of the undergraduate course of Geology as given in ANNEXURE I below.

### ANNEXURE I

| Semester | CORE COMPULSORY  |  | CORE ELECTIVES  |  |  |  |
|----------|--|--|---|--|--|--|
|          |  |  |   |  |  |  |
| I        | <b>GEL-I.C-1</b><br>Fundamentals<br>of Mineralogy                    | <b>GEL-I.C-2A</b><br>Earth's<br>Dynamics<br>and<br>Tectonics |   |  |  |  |
| III      | <b>GEL-III.C-5A</b><br>Advanced<br>Mineralogy<br>and<br>Geochemistry |  | <b>GEL-III.E-1</b><br>Physical<br>Geology                 | <b>GEL-III.E-2</b><br>Groundwater<br>and<br>Hydrogeology | <b>GEL-III.E-3A</b><br>Ore Genesis             | <b>GEL-III.E-4</b><br>Marine<br>Geology                                      |
| V        | <b>GEL-V.C-7A</b><br>Sedimentary<br>Petrology                        |  | <b>GEL-V.E-9A</b><br>Stratigraphy<br>of India –<br>Part I | <b>GEL-V.E-10</b><br>Petroleum<br>Geology                | <b>GEL-V.E-11A</b><br>Metamorphic<br>Petrology | <b>GEL-V.E-12</b><br>Remote<br>Sensing and<br>Digital<br>Image<br>Processing |

3. Flexibility to the Board of studies in Geology in shuffling/modifying the core/elective courses between/of the semesters of the BSc programme.

The Chairman thanked the members of the Board of Studies in Geology for their valuable contribution and active participation in the meeting.

The meeting ended at 6:30pm with a vote of thanks to the Chair.

The foregoing minutes of the meeting were circulated by the Chairman, Board of Studies in Geology within fifteen days after the conclusion of the BoS meeting.



The following members of the Board of Studies were present for the meeting:

1. Shri Harish S S Nadkarni- Chairman
2. Dr. R. A Duraiswami - Academic Council Nominee
3. Shri Allan Rodrigues- Member
4. Ms Meghana S Devli - Member
5. Mrs Magnolia Miranda - Member
6. Shri Malcom Lelis Afonso - Member Secretary
7. Shri Akshay Kelkar - Member
8. Shri Kiran Sawant Dessai - Representative from the Industry/Corporate Sector

Dr. (Prof.) Mahender Kotha - Nominee of the Vice-Chancellor of Goa University, Dr. Hrishikesh Samant - Academic Council Nominee and Ms Delia Cardozo - Postgraduate Meritorious Alumnus and had expressed their inability to attend the meeting.



Meghana S Devli  
(Member)



Shri Harish S S Nadkarni  
(Chairman, Board of Studies in Geology)

Date: 04 April 2018

PART C: The remarks of the Dean of the Faculty:-

- a. The minutes are in order
- b. The minutes may be placed before the Academic Council with remark, if any.
- c. Important points of the minutes which need clear policy decision of the Academic Council to be recorded.

Signature of the Dean of Sciences: \_\_\_\_\_

  
Mrs. Shaila Ghanti

Date: 6/4/18