



**Parvatibai Chowgule College of Arts and Science
(Autonomous)**

Accredited by NAAC with Grade 'A+'
Best Affiliated College-Goa University Silver Jubilee Year Award



**MINUTES OF THE MEETING OF THE BOARD OF STUDIES IN GEOLOGY
HELD ON 10TH FEBRUARY, 2024**

Vide Chowgule College Notice BOS/2023-24/133(C)/1306 dated 01 February 2024 a virtual meeting of this Board of Studies (BoS) was convened on February 10, 2024 at 2.30 p.m. in Block A, Parvatibai Chowgule College of Arts and Science (Autonomous), Margao-Goa. Since the number of members present represented the quorum, the Board began its proceedings.

Minutes are presented in the format.

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

1. Dr. Meghana S Devli – Chairperson
2. Mrs. Swati S Ghadi – Member Secretary
3. Shri. Sachit Kuttikar– Member
4. Ms. Siddhi Shirodkar – Member
5. Ms Shruti K. Mestry – Member

The following members of the Board of Studies attended the meeting online via Google meet link:
<https://meet.google.com/era-rmnc-mom> ;Or dial: (US) +1 413-648-7709 ; PIN: 255 711 762#

1. Dr Hrishikesh Samant – Nominee of the Vice Chancellor of Goa University
2. Dr Makarand Kale – Academic Council Nominee
3. Dr. Prakash Narashimha – Academic Council Nominee
4. Shri Brahmanand Sawant – Postgraduate Meritorious Alumnus

Members absent with intimation: NIL

Members absent without intimation:

1. Shri. Smitesh S Talawadekar – Representative from Corporate Sector

Agenda:

1. To revise CLO and alignment of CLO to PLO/PO in accordance with OBE.
2. To approve the syllabus of Minor Course at Semester III
3. To approve Value Added Courses at Semester I & II
4. A.O.B.



PART B:

Important points/recommendations of Board of Studies members that require consideration/approval of Academic Council:

1. To seek approval for the revised Course Learning Outcome (CLO) for the Discipline Specific Core courses, UG-GEL-101: Fundamentals of Geology, to be offered at Semester I; UG-GEL-102: Earth's Dynamics And Tectonics to be offered at Semester II and UG-GEL-201: Stratigraphy and Palaeontology, to be offered at Semester III (Annexure A).
2. To seek approval for the Programme Learning Outcomes (PLO) in the Program of Geology (Annexure B).
3. To seek approval of the syllabi for the course, 'UG-GEL-207: Earth Processes and Landforms', to be offered as Minor Stream at Semester III under the approved NEP 2020 Programme structure and to be implemented from the academic year 2024-25 (Annexure C).



Ms Swati S Ghadi
(Member Secretary)



Dr Meghana S Devli
(Chairperson, Board of Studies, Geology)

Date: 15 February 2024.



Annexure A
Summary of the changes incorporated in the BoS - Geology

Semester	Course	Existing	Change suggested	Reason
I	UG-GEL-101: Fundamentals of Geology	CLO4 Identify rock-forming minerals in hand specimen using their physical properties and classify minerals into crystal systems based on crystal symmetry. CLO5 Classify and identify the different igneous, sedimentary and metamorphic textures and structures based on hand specimens.	CLO4 Identify rock-forming minerals in hand specimen using their physical properties. Classify minerals into crystal systems based on crystal symmetry. Classify and identify the different rock textures and structures based on hand specimens.	CLO4 and CLO5 merged to maintain uniformity in the number of CLOs across all Discipline Specific Core (DSC) courses; four CLOs per DSC
II	UG-GEL-102: Earth's Dynamics And Tectonics	CLO4 Read and interpret geological maps and draw geological cross – sections. CLO5 Derive graphical solution to structural problems.	CLO4 Read and interpret geological maps, draw geological cross – sections and derive graphical solution to structural problems.	CLO4 and CLO5 merged to maintain uniformity in the number of CLOs across all Discipline Specific Core (DSC) courses; four CLOs per DSC
III	UG-GEL-201: Stratigraphy And Palaeontology	CLO4 Read maps, solve problems on bearings and handle clinometer compass. CLO5 Describe and identify fossils/casts/shells w.r.t their morphology and geological age.	CLO4 Prepare lithological logs using field data, interpret geological maps, construct geological cross-sections incorporating horizontal and inclined series. Describe and identify fossils, casts, and shells based on their morphology and geological age.	CLO4 and CLO5 merged to maintain uniformity in the number of CLOs across all Discipline Specific Core (DSC) courses; four CLOs per DSC



Annexure B

PROGRAMME LEARNING OUTCOMES (PLO)

After successful completion of a three years Bachelor's degree in Geology, the student will be able to:

PLO-1: CONCEPTUAL KNOWLEDGE BUILDING TO DEEPER LEARNING	Acquire a solid base of knowledge with respect to conceptual learning which shall help them further strengthen the deeper learning in the science of geology including earth dynamics, mineralogy, petrology, stratigraphy, structural features and tectonics.
PLO-2: DEVELOPMENT OF SKILLS	Demonstrate pertinent skills and global competencies including problem-solving skills needed to solve diverse geoscience-related problems, communication and analytical skills entailing careful listening, textual analysis, and presenting complex information succinctly, ICT skills, and develop personal skills like working independently and in teams.
PLO-3: GEOLOGICAL FIELD TRAINING	Make meticulous observations during field trainings, analyze, and interpret data/information collected using appropriate methods and report accurately the findings of the investigations while relating the conclusions to relevant theories in Geology.
PLO-4: ETHICAL VALUES, SOCIAL RESPONSIBILITY AND PROFESSIONAL APTITUDE	Acquire procedural knowledge imbued with ethical values and social responsibilities that creates different types of professionals related to the disciplinary area of Geology, including professionals engaged in industry, research and development, academics, and government/public service.



Annexure C

SYLLABUS OF DISCIPLINE SPECIFIC CORE (MINOR STREAM: LEVEL 200) AT SEMESTER III

Course Title : **EARTH PROCESSES AND LANDFORMS**
Course Code : **UG-GEL-201**
Credits : **04 (Theory: 03 credits; Practical: 01 credit)**
Marks : **100**

Course Objectives

Over millions of years, the Earth's surface has been continually shaped and transformed by natural forces, including wind, rivers, and glaciers. This course aims to delve into the understanding of the processes and physical forces responsible for developing surficial features. Moreover, it explores how various landforms are intricately woven products of the dynamic interplay among these geological processes.

Course Learning Outcomes

Upon completion of the course, the student will be able to:

- CLO1** Explain the processes of weathering, erosion, transportation, deposition, and how these geological processes create desert landforms.
- CLO2** Identify and explain formation of various landforms created by geological action of streams and underground water.
- CLO3** Identify and explain formation of various landforms created by geological action of glaciers and the sea.
- CLO4** Explain basin morphometry technique to infer basin characteristics and prepare long and cross sections of river profiles from SOI Toposheet.

Module I

(15 Hours)

- Weathering, erosion, transportation and deposition
- Mechanical, chemical and biological weathering
- Products of weathering: Soil Profile
- Rate of Weathering versus Stability of Minerals
- Agents of Transportation – Wind, Water, Glaciers, Gravity
- Factors Affecting Depositions
- Characteristics of Desert.
- Problems Associated with Desertification.
- Geological action of wind
- Desert Landforms

Module II

(15 Hours)

- Drainage Basin and Drainage Patterns
- Fluvial Dynamics
- River System and Plate Tectonics



- Processes and landforms associated with Upper, Middle and Lower course of river.
- Introduction to Ground water
- Ground water erosional and depositional landforms
- Karst Topography

Module III

(15 Hours)

- Types of glaciers and Glacial Budget
- Erosional and Depositional Features of Glaciers
- Action of Sea Waves
- Erosional and depositional features on coastal areas.

PRACTICAL MODULE: 1 Credit

(30 hours)

1. Basin Morphometry Perimeter Calculation using rotameter
 2. Area Calculation – Square Grid/Planimeter/Area using triangles
 3. Stream Ordering (Strahler's Method)
 4. Drainage Network Morphology – Bifurcation and Length ratio
 5. Basin Geometry – Basin Circularity, Intensity of Dissection – Drainage Density, Stream Frequency
- Draw Inference for the Basin based on the result
 - Long Profile and Cross Profile of River – Upper Course, Middle Course, Lower Course of river from SOI Toposheet.

REFERENCE BOOKS:

- Hugget, R.J., 2007. Fundamentals of Geomorphology. Taylor & Francis
- Monroe, S. J and R. Wicander., 2014. The Changing Earth: Exploring Geology and Evolution. Brooks Cole Publishers.
- Mathur, S. M., 2012. Physical Geology of India. National Book Trust
- Carlson, D.H., Plummer, C.C., McGear, D., 2008. Physical Geology: Earth revealed. Higher Education.
- McConnell, D., Steer, D., Knight, C., Owens, K., Park, L., 2008. The Good Earth – Introduction to Earth Science. Higher Education.
- Monroe, J.S., Wicander, R., Hazlett, R., 2007. Physical geology – Exploring the Earth (6th Ed.) Thomson Brooks/Cole.
- King, C.A.M., 2006: Techniques in Geomorphology, Edward Arnold, London
- Sparx, B.W., 1986. Geomorphology. John Wiley & Sons Inc; John Wiley & Sons Inc

