Central University of Kerala

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Kasaragod, Kerala, India, 671123

DEPARTMENT OF GEOLOGY

No. CUK/GEO/BOS/MIN/2021/01 Dtd: 17/08/2021

Minutes of the 2nd Meeting of the 2th Board of Studies in Geology held online at 10.00 a.m. on 17/08/2021

The Department of Geology, Central University of Kerala conducted the Board of Studies (BoS) meeting on 17th August, 2021. It was the Second BoS meeting of the second Board of Studies. Due to the COVID-19 pandemic situation the meeting was conducted through online via Google Meet platform. The panel members included invited subject experts, Head of the Department, internal members and department faculties as special invitee. The attendees of the meeting were as follows: -

BoS Attendees:

Invited subject experts

- Prof. (Dr.) Rajneesh Bhutani, Professor, Department of Earth Sciences, Pondicherry University
- Prof. (Dr.) Rajesh Raghunath, Professor, Dept .of Geology, University of Kerala,
- Prof. (Dr.) Prakash Narasimha, K.N., Professor, Department of studies in Earth science, University of Mysore, Manasagangotri
- Dr. A. Anil Kumar, Director, Marine & Coastal Survey Division, Geological Survey of India, Manglaluru.

Internal members from the Central University of Kerala

- Dr. Pratheesh P., Assistant Professor and HOD (i/c), Dept. of Geology.
- Dr. Sijinkumar A.V., Assistant Professor, Dept. of Geology.
- Dr. S. Anbazhagi, Assistant Professor, Dept. of Environmental Science.

Special invitee from the Central University of Kerala

- Dr. Sandeep K., Assistant Professor, Dept. of Geology.
- Dr. Chandan Kumar B., Assistant Professor, Dept. of Geology.

The BoS meeting started with the welcome address by Dr. Pratheesh P., Head of the Department (i/c). Dr. Pratheesh P. gave a brief introduction on the objectives of the BoS meeting. Thereafter, he welcomed all experts and faculty to the meeting, and briefed the agenda of BoS meeting.

The agenda for discussion in the BoS meeting was proposed by the Head of the Department. The main items discussed in the BoS are given below:

(a) The inclusion of programme outcome and course outcomes in the syllabus of department of geology, central university of Kerala thereof.

(b) Consider the revised syllabus for 2021 admission

c) Inclusion of employment oriented courses in syllabus

The details of agenda-wise discussion and the final recommendation by the BoS are given below.

Agenda 1: The inclusion of programme outcome and course outcomes in the syllabus of department of geology, central university of Kerala thereof.

Dr. Pratheesh P. has explained the Faculty Council discussion regarding inclusion of programme outcome and course outcomes in the syllabus. Then Dr. Pratheesh P. invited the Board of Studies opinion. BoS members have accepted the proposed programme outcome and course outcome. Prof. Rajneesh Bhutani opined that there should be some integration of thinking skills in the programme outcome.

Recommendation: Following a detailed discussion on the contents, the members approved the inclusion of programme outcome and course outcomes in the Department of Geology, Central University of Kerala curriculum.

Agenda 2: Consider the revised syllabus for 2021 admission.

Dr. Pratheesh P. has presented the revised syllabus for 2021 along with proposed programme structure. BoS members have accepted the proposed programme structure with some small suggestions.

Prof. Rajneesh Bhutani pointed that Geochemistry was missing from the curriculum, which is very much essential for an earth science. After a long discussion, BoS has decided to incorporate Geochemistry as a compulsory elective paper. Prof. Prakash Narasimha has suggested the usage of 'Planetary Sciences' instead of 'planetary Geosciences'. Dr. A. Anil Kumar has suggested a title change for Oceanography as 'Oceanography and Marine Geology'. Prof. (Dr.) Rajesh Raghunath has recommended some modifications in sequence stratigraphy. Apart from this BoS has recommended a number of additions in the core course discussion.

Recommendation: After a detailed discussion on the revised syllabus, the members unanimously approved the new syllabus for MSc Geology programme in Department of Geology Central University of Kerala. All the recommendations from the experts have incorporated in the revised syllabus.

Agenda 3: Inclusion of employment oriented courses in syllabus.

Dr. Pratheesh P. has explained the feedback received from the Alumni through the Alumni Coordinator, on the inclusion of employability oriented courses. He also pointed that the faculty council has discussed the same and incorporated a new core course 'Geospatial Technology and Engineering Geology' in the proposed syllabus. BoS had a fruitful discussion on the syllabus framework of the newly inducted course.

Recommendation: Following a detailed discussion on the contents, the members approved inclusion of 'Geospatial Technology and Engineering Geology' as core course in the proposed curriculum.

After this, overall agenda discussed in the BoS were summarised by Dr. Pratheesh P. Thereafter, Dr. Sijinkumar A.V. offered the vote of thanks, which conluded the BoS meeting.

Dr. Pratheesh P.

Head (i/c), Department of Geology

CENTRAL UNIVERSITY OF KERALA
DEPARTMENT OF GEOLOGY
M.Sc. GEOLOGY

Course Code	EGE 5102	Semester	I
Course Title	Structural Geology		
Credits	3	Type	Core

This is a problem solving and employability based Geotechnical skill development course

Course Description

Structural geology is the study of deformation and deformed structures on earth surface. It will explain the complex deformational history of earth structures in terms of various spatial and chronological units at different scale. Understanding on present day geological structure will provide a clue towards the past geological event, which modified our earth in geological time.

Course Outcome

By the end of the course, students are expected to be able to:

- identify the geological structures in both macroscopic and microscopic scale.
- describe the deformational structures of an area from the geologic maps and outcrop patterns.
- elucidate the deformation history of an area using rock fabrics and geometric relationships
- get a proper enlightenment towards the geological literature

Course Structure

Module - 1

Deformation-concept, component and type. Continuum mechanics and rheology. Elastic, plastic and brittle deformation. Concept of stress. Concept of strain. Stress and strain ellipsoids. Mohr circles. Rock failure. Mohr-Coulomb failure criteria. Faults, Joints and Fractures.

Module - 2

Mechanics of folding and Buckling. Biot-Ramberg theory of buckling. Folds - Geometry of cylindrical, non-cylindrical and conical folds. Fold classifications -Donath and Parker and Ramsay. Fold interference and Superposed folding.

Module - 3

Fabric- Planar and linear fabrics. Tectonites- classification. Foliation -types, classification and origin. Lineation - types, classification and origin. Stereographic projections in structural geology. $\boldsymbol{\pi}$ and $\boldsymbol{\beta}$ diagrams. Geometric analysis of geological structures on macroscopic scale. Petrofabrics.

Evaluation &Grading

Lab Assessment – 10%
Field Assessment – 10%
Skill development (Analytical, Writing and Presentation) – 10%
Class Test – 10%

***End Semester Assessment* – 60%**

References

1. Billings, M. P. (2016) Structural Geology. Pearson Education; Third edition, 624p.

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3. Ragan, D.M. (1969), Structural Geology, Wiley, 2nd edition, 602p.
4. Turner, E.J. and Weiss, L.E. (1963), Structural Analysis of Metamorphic Tectonites, Mc. Graw Hill, 545p.
5. Hobbs, B.E., Means, W.D. and William, P.F. (1976), An outline of Structural Geology, John Wiley and Sons, 571p.
6. Robert. J.Twiss and Eldridge.M.Moores (2007). Structural Geology, W.H.Freeman and Company, 695p.
7. Ramsay, J.G. (1967) Folding and Fracturing of Rocks. Mc Graw Hill, 586p.
8. Ramsay, J.G. and Huber M.I. (1987) The Techniques of Modern Structural Geology: Folds and Fractures, Academic Press, 391p.