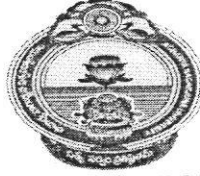


REGISTRAR



Telephone No: 0863-2346115  
Fax:0863-2293378/2293320  
Website::http://www.anu.ac.in

No.ANU/Acad./U.G/CBCS/III Geology/SEM-VI/Syllabus/2017

Date: 17-10-2017

**PROCEEDINGS OF THE VICE-CHANCELLOR**

Sub:- ANU – Academic –UG courses –CBCS - III Geology VI semesters  
Syllabus - Approval - Orders – Issued.

- Ref:- 1. Minutes of the meeting of the Board of Studies (UG) in Geology  
held on 26-09-2017.  
2. Vice-Chancellor's orders dated 12-10-2017.

\*\*\*\*\*

**ORDER:-**

The Vice-Chancellor, after having considered the minutes 1<sup>st</sup> cited, has approved the III B.Sc Geology VI semesters syllabus in CBCS pattern for the academic year 2017-18 prepared by the Board of Studies (UG) in Geology. The titles of the papers are mentioned below.

**Semester-VI**

1. Paper VII- Mineral Exploration and Mineral Economics
2. Paper VIII- Environmental Geology

(BY ORDER)

  
**JOINT REGISTRAR**  
Academic

To  
The Chairman and all members, Board of Studies (UG) in Geology, ANU.  
All the Principals of the Affiliated Colleges under ANU area.  
Copy to:  
The Dean, Faculty of Natural Science, ANU.  
The Dean, CDC, ANU.  
The Coordinator, UG (Exams), ANU  
The Addl. Controller of Examinations, ANU.  
The P.A. to Vice-Chancellor/ Registrar/Rector, ANU.

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**SEMESTER-VI**

**Paper- VII- Mineral Exploration and Mineral Economics**

**Unit-I**

Scope of mineral prospecting and exploration. Prospecting criteria and guides - structural, lithological and stratigraphical guides. Geochemical prospecting - primary and secondary dispersion - Geochemical association and path finders.

(12 hrs)

**Unit-II**

Geophysical Exploration - brief description and application of gravity method - gravimeters.

Brief description and application of magnetic method - magnetometers.

Brief description and application of seismic method - geophones. (12 hrs)

**Unit-III**

Brief description and application of electrical method - Resistivity meter.

Brief description and application of radioactive method - G-M Counter and Scintillometer.

Photogeology - Aerial photographs, Remote sensing and Aerial photography techniques used in mineral exploration. (12 hrs)

**Unit-IV**

Sampling Technique: Definition of sampling, Methods of sampling - Channel, chip, grab, car, groove, wagon, Pitting and trenching and drill hole sampling. Coning and quartering. Estimation of ore reserves. (12 hrs)

**Unit-V**

Principles of mineral Economics. Classification of mineral deposits. National Mineral policy. Mineral concession Rules. Mineral conservation and substitution. Status of mineral production in India. (12 hrs)

**Text Books:**

- |                                   |   |             |
|-----------------------------------|---|-------------|
| 3. Mining Geology                 | - | McKinnstry  |
| 3. Principles of mineral dressing | - | A.M. Gaudin |

**Reference Books:**

- |   |   |                        |
|---|---|------------------------|
| 2. Mineral Economics                    | - | R.K.Sinha & N.L.Sarma. |
| 1. Geological Prospecting & Exploration | - | V. M. Kneiter          |

1.Prof.V.Veeraiah

2.Prof. N. Balayerikala Reddy

3.Dr. L. Chandra Sekhar Reddy

**LAB-VII (Practicals) 50 Marks**  
**At the end of Sixth semester**

**Practical- VII- Mineral Exploration**

Estimation of ore reserves: Bedded type and vein type (Extended area and included area methods problems)

Sieve analysis problems- calculation of standard statistical parameters based on sieve analysis data

Sampling Techniques – Preparation of composite sample of sediment by coning and quartering methods

**Field work:** Submission of Dissertation / Field Report. Study of toposheets and field work in the neighbouring areas and also other places of geological importance.

**Note:** Field training camp: Ten days during vacation/ Working Days (Compulsory)

1.Prof.V.Veeraiah

2.Prof. N. Balayerikala Reddy

3.Dr. L. Chandra Sekhar Reddy

**SEMESTER-VI**  
**Elective Paper-VIII**  
**Paper-VIII- (B): Environmental Geology**

**Unit-I**

Scope and Concept of environmental geology - environmental awareness - Role of Geologist in environmental protection and planning. A brief study of water and air pollution. (12 hrs)

**Unit-II**

Land use planning: Soils, Types and Classification of soils - Site selections - Waste disposal - environmental effects, Waste recycling - Land cover - Application of remote sensing. (12 hrs)

**Unit-III**

Mining impact on the environment - Health hazards - Mineral resource depletion. Environmental considerations in location and construction of dams, reservoirs and tunnels. (12 hrs)

**Unit - IV**

Geological Hazards - floods, shifting of river courses - land slides - earthquakes - Prediction and Protection. Man made hazards. (12 hrs)

**Unit - V**

Beach erosion - sedimentation - coastal zone protection & Management - coastal engineering constructions - their effects and remedial measures. Land slides- causes and preventive measures. (12 hrs)

**Text Books:**

- |                          |   |            |
|--------------------------|---|------------|
| 1. Environmental Geology | - | D.R.Coats  |
| 2. Environmental Geology | - | E.A.Keller |

**Reference Books:**

- |                          |   |                 |
|--------------------------|---|-----------------|
| 1. Environmental Geology | - | C.W. Montgomery |
| 2. Environmental Geology | - | K.S.Valdiya     |

1.Prof.V.Veeraiah

2.Prof. N. Balayerikala Reddy

3.Dr. L. Chandra Sekhar Reddy

**LAB-VIII (b) (Practical's) 50 Marks**  
**At the end of Sixth semester**  
**Elective Practical VIII (b) – Environmental Geology**

Soil testing – determination of pH and EC of the soil

Estimation of erosion and sedimentation of soils

Grain size analysis

Chemical Analysis of surface and sub-surface water.

Graphical representation of water analysis data and classification of waters.