PROCEEDINGS OF THE VICE-CHANCELLOR


Ref:- 1. Minutes of the meeting of the Board of Studies (UG) in Geology held on 26-09-2017.
3. The Secretary, APSCHE, Tadepalli, vide letter No. APSCHE/ Secy/ Syllabus/2017.

ORDER:-

The Vice-Chancellor, after having considered the Secretary, APSCHE letter in the ref 3rd and minutes 4th cited, has approved the III year B.Sc Geology - VI semester syllabus in paper VII- Elective and paper VIII – Cluster Elective ‘A’ in CBCS pattern for the academic year 2017-18 by the Board of Studies (UG) in Geology. The titles of the papers are mentioned below.

Semester-VI

1. Paper VII- Elective- Hydrogeology (Theory & Lab)

Cluster ‘A’ Elective Papers Chosen:

   (A-2): Environmental Geology
   (A-3): Introduction to Remote Sensing & GIS

Lab VIII- (A-1): Mineral Exploration lab
   (A-2): Environmental Geology
   (A-3): Project Work

(By Order)

Joint Registrar

Academic
Recommendations/ Report of subject expert committee on the introduction of cluster electives in Geology (VI Semester- VIII Paper) for UG BSc.,

2. Ln No. APSCHED/Secy/Syllabus/2017, dated 2 November 2011 from the Secretary, AP State Council of Higher Education

Minutes of the Meeting

In pursuance of the orders of the Secretary, AP State Council of Higher Education (APSCHE) vide letter no: APSCHED/Secy/Syllabus/2017, dated 2 November 2011, the Chairman and the members of the committee on framing the cluster electives in geology for the academic year 2017-18, have met on 3rd November 2017 and 15th November 2017 in the Adikavi Nannaya University under the Chairmanship of Prof. Y. Srinivasa Rao to propose the cluster electives for Geology. Following resolutions were adopted.

1. It is resolved to propose the following Cluster electives for UG Geology in VIII Paper in Semester VI.

<table>
<thead>
<tr>
<th>S. No</th>
<th>Cluster No</th>
<th>Title of the Paper - VIII</th>
<th>Hrs./ week</th>
<th>Max. Marks</th>
<th>Mid Sem. Exam</th>
<th>Credits</th>
</tr>
</thead>
</table>
| Paper VIII- Cluster Electives
| Cluster A - Theory
| 1 | A-1: Introduction to Mineral Exploration | 3 | 75 | 25 | 3 |
| | A-2: Environmental Geology | 3 | 75 | 25 | 3 |
| | A-3: Introduction to Remote Sensing & GIS | 3 | 75 | 25 | 3 |
| Cluster A - Lab
| 1 | A-1 Lab: Mineral Exploration Lab | 2 | 50 | -- | 2 |
| | A-2 Lab: Environmental Geology Lab | 2 | 50 | -- | 2 |
| | A-3: Project work | 2 | 50 | -- | 2 |

Detailed syllabi for the proposed cluster papers is enclosed herewith.

1

1) (Chairman of Geology)
2) (BSM Member)
SEMESTER – VI Elective Paper – VII

Paper – VII: HYDROGEOLOGY

Unit-I

Ground Water: Origin and Occurrence of ground water, Vertical distribution of sub-surface water, zone of aeration-soil water, vadose water, capillary fringe. Zone of saturation - water table. Perched water table. Recharge and discharge areas.

(12 hrs)

UNIT-II

(12 hrs)

UNIT-III
Quality of Ground Water - Physical, chemical and Biological characteristics of groundwater. Suitability of groundwater for drinking, irrigation and industrial purposes. Pollution of Ground Water; Pollution in relation to urban, industrial and Agricultural sources. Brief account of saline water intrusion.

(12 hrs)

UNIT – IV

(12 hrs)

Unit-V

Concept of water shed management.

(12 hrs)

1. Prof. V. Veeraiah, Prof. N. Balayerikala Reddy, 3. Dr. L. Chandra Sekhar Reddy
Text Books:
1. Groundwater hydrology - D.K.Todd
2. Hydrogeology - K.R.Karanth

Reference Books:
1. Applied Hydrogeology - Fetter.
2. Hydrogeology - S.N.Davis and R.J.M.Dewiest
3. Ground Water - H.M.Raghunath

LAB-VII (Practical)  50 Marks

At the end of VI Semester

Elective Practical VII:: HYDROGEOLOGY

Calculation of Porosity and Permeability from the given data Chemical analysis of Water.

Classification of ground water for use in drinking and irrigation purposes-(problems).

1) 
2) 
(BOS Chairman)

2. Y. Rangarajah
(BOS Member)
Cluster A

VIHA -1: Introduction to Mineral Exploration (Theory)

UNIT - I

UNIT- II

UNIT- III

UNIT - IV

UNIT-V

Text Books:
1. Geological Prospecting & Exploration - V. M. Kneiter
2. Mining Geology - McKinnstry

Mineral Exploration – Syllabus (Practical)

1. Estimation of Ore reserves: Bedded type and vein type (Extended area and included area methods)
2. Field work in neighboring areas of geological importance: submission of dissertation/ field report/
VIIIA-2: Environmental Geology

Unit-I
Introduction, Concepts of environmental geology
Earth system science: atmosphere, hydrosphere and lithosphere.

Unit-II:
Definition of soil, soil formation, soil profile, Types of soils, Classification of soils and its properties, Soil distribution in India. soil degradation and contamination. Pollution: definition, types (air, water, land, soil). Global warming, ozone depletion

Unit-III
Natural disasters: earthquake and tsunamis- Earthquake terminolgy, seismic zones of India, history of earthquakes & tsunamis of India
Volcanoes: volcanic hazards its effects on human beings and environment
Landslides: Types, causes and mitigation methods.

Unit-IV
Definition of coasts, waves and currents, types of coastal hazards, sediment supply and erosion. coastal zone protection and management
Indian coast lines. Floods and cyclones: types, causes & mitigation.

Unit-V
Mining impact on environment and health hazards, Environmental considerations in location and construction of dams, reservoirs and tunnels. Types of wastes and its disposal with special reference to hazardous chemical wastes and radioactive waste. Oil leakages in ocean and its impact on marine life.

Practicals:
1. Grain size analysis.
2. Soil profile,
3. Identification of historical events of earthquake and tsunamis in India and world.
4. Identification of locations of volcanoes in world and India in the map.

Text Books:
1. Environmental Geology - K S Valdiya
2. Environmental Geology - Sudarshan V, Ravi C and Krishna Ch
3. Living with Earth: An introduction to Environmental Geology - Travis Hudson
4. Environmental Geology - Strainer & Strahier
5. Environmental Geology - Landgreen
6. Environmental Geology - Keller
VIIIA-3: Introduction to Remote sensing & GIS

UNIT - I

UNIT - II
Mosaics, Types of Stereoscopes, EMR Interaction with Atmosphere and Earth Surface.

UNIT - III


UNIT - V
Introduction to GIS. Data models, Main Segments of GIS, Components of GIS, GIS – Integration, GIS applications in landslide hazard zonation and environmental pollution studies

Books Recommended:

VIII A-3: Project work

1) 
2)
MODEL QUESTION PAPER (For all Semesters)
B.Sc., GEOLOGY

Time: 3 hours

Max. Marks: 75

Section A
Answer any Five questions, each question carry 5 Marks
5x5=25 marks

Section B
Answer all questions, each question carry 10 Marks
5x10=50 marks

UNIT - I
9(a)
Or
(b)

UNIT - II
10(a)
Or
(b)

UNIT - III
11(a)
Or
(b)

UNIT - IV
12(a)
Or
(b)

UNIT - V
13(a)
Or
(b)

1. Prof. V. Veeraiah
2. Prof. N. Balayerikala Reddy
3. Dr. L. Chandra Sekhar Reddy