FOUR YEAR COURSE STRUCTURE OF UNDERGRADUATE PROGRAMME IN GEOLOGY UNDER NEP 2020

First Year- Undergraduate Certificate

COURSES OF STUDY FOR INTRODUCTORY REGULAR FYUGP IN "GEOLOGY"

SEMESTER I/II/III	INTRODUCTORY REGULAR COURSE	1 Paper

1. INTRODUCTORY REGULAR COURSE IRC-1/VPG-GEL

(Credits: Theory 03, Practical 0)

The INTRODUCTORY REGULAR COURSE (IRC) of Geology is to be studied by the Students opting major subject other than Geology

Students opting Geology as major subject have to select a subject associated with Geology as INTRODUCTORY REGULAR COURSE (IRC)

Marks: 25 (5 Attendance & others + 20 SIE: 1.5 Hr) + 75 (ESE: 3Hrs) = 100	Pass Marks: Th. (MSE+ESE) = 40

Instruction to Question setter:

Semester Internal Examination (SIE 10+5=15 marks)

The semester internal examination shall have two components

[a] One Semester Internal Assessment Written Test (SIA) of 15 Marks

[b] Class Attendance Score (CAS) including the behaviour of the students towards teacher and other student of the college of 5 marks

End Semester Examination (ESE 75 marks)

There will be two groups of questions. Group A is compulsory which will contain three questions. Question No. 1 will be very short answer type consisting of five questions of 1 mark each. Question No. 2 & 3 will be short answer type of 5 marks each. Group B will contain descriptive type seven questions of fifteen marks each, out of which any four are to be answered

Note: There may be sub divisions in each question of group B

Semester-II [Credit – 4, Marks 60 + 15] **MJ-2/VPG-GEL**

Section – A: Photo Geology

Elementary idea of photo geology. Types of aerial photographs. Types of aerial cameras and flight planning. Human eye and stereoscopic vision, depth perception. Stereoscopes - their types, construction and function. Geometric characteristics of aerial photographs. Scale of the photographs, stereoscopic parallax. Elements of air photo interpretation. Identification of sedimentary igneous and metamorphic rocks and various Aeolian, glacial, fluvial and marine landforms.

Photogeology: Types and acquisition of aerial photographs; Scale and resolution; Principles of stereoscopy, relief displacement, vertical exaggeration and distortion Elements of air photo interpretation Identification of sedimentary, igneous and metamorphic rocks and various aeolian, glacial, fluvial and marine landforms

Section – B: Sedimentary Petrology

Formation of sedimentary rocks. Lithification and diagenesis. Classification of sedimentary rocks. Structures of sedimentary rocks and their significance. Determination of top and bottom of sedimentary beds. Textures of sedimentary rocks. Concept of Provenance- mobility of oxides, stability of minerals and significance of light and heavy minerals. Petrographic notes on sandstones, arkose, shale, conglomerate, breccia, limestone and dolomite.

Practicals [Credit – 2, Marks – 25] No Internal

1. Interpretation of aerial photographs
2. Determination of scale of the photographs and images
3. Height measurement using parallax bar.
4. Exercises on sedimentary structures
5. Paleocurrent analysis.
6. Megascopic and Microscopic study of sedimentary rocks.
7. Geological field work for one week
8. Record and viva-voce

Books:

1. Demers, M.N., 1997. Fundamentals of Geographic Information System, John Wiley & sons. Inc.
2. Jensen, J.R., 1996. Introductory Digital Image Processing: A Remote Sensing Perspective, Springer- Verlag.
3. Lillesand, T. M. & Kiefer, R.W., 2007. Remote Sensing and Image Interpretation, Wiley.
4. Richards, J.A. and Jia, X., 1999. Remote Sensing Digital Image Analysis, Springer-Verlag.
5. The Principles of Petrology - G.W. Tyrrell.
6. Petrology -Ehlers and Blatt.
7. Sedimentary Rocks -F.J. Pettijohn.
8. Tucker, M. E. (2006) Sedimenary Petrology, Blackwell Publishing.
9. Fundamental of Remote Sensing and GSI- S.K Sinha.
10. Principles and Application of Photogeology: S.N.Panday