

Syllabus for M. Phil. (Geology) (Semester System)

(To be effective from 2007 batch and onwards)

First Semester

Paper – I	Research Methodology	- 100 marks
Paper – II	Practical	- 100 marks

Second Semester

Paper – III	Developments in Geology	- 100 marks
Paper - IV	Dissertation	- 100 marks

Detailed Syllabus

SEMESTER -I

PAPER - I (Theory) Research Methodology 100 marks

Unit – I- 20 Marks

Modal analysis, CIPW Norm and Niggli value calculation and their interpretation, Texture and structure of sedimentary rocks and their significance. Computation of mean, standard deviation, skewness and kurtosis. Basin analysis, Palaeocurrent analysis. ACF, AKF and AFM diagrams.

Unit – II - 20 Marks

Geochemical analysis of rocks and minerals with reference to SiO₂, Al₂O₃, K₂O, Na₂O, Fe₂O₃; Hydrogeochemical analysis with reference to Ca, Mg, TH, conductance, carbonate, bicarbonate, chloride, Sulphate; well drilling techniques – Percussion and Rotary.

Unit – III - 20 Marks

Structural analysis - π , β diagram and interpretation, Interpretation of satellite data and aerial photographs with reference to geomorphology, exploration of ore deposits and groundwater, Mechanics of fracturing in rocks, Mohr's diagrams and its interpretations.

Unit – IV - 20 Marks

Ore textures and microstructures, properties of ore minerals under reflecting microscope, Ore reserve calculation, Coal petrography, Proximate & ultimate analysis.

Unit – V - 20 Marks

DTA & X-Ray analysis of geological materials, Palynological studies, Petroliferous basins of India, Methods of analysis of elements by Atomic Absorption Spectrophotometer.

PAPER – II - Practical Related to Theory Paper – I - 100 Marks

