

M. Tech. (Applied Geology) 2020-21

I Semester

Course no.	Course Name	Expected Learning Outcomes
GEO CC 131	Geomorphology	The students get an insight to study the cause, effects and consequences that any geomorphic area shows.
GEO CC 132	Crystallography & Mineral Optics	The students will develop capability to study the parts of a crystal, axes and their measurements in hand specimen and optical properties under microscope.
GEO CC 133	Mineralogy	The students will develop capability to transform the knowledge into higher aspects like identification of mineralized zone and find
GEO CC 134	Practical- Crystallography Mineral Optics & Mineralogy	
GEO CC 135	Structural Geology	This course proposes an objective to give an outline of the basic structural analysis by discussion, drawing and measurements along with some field work.
GEO CC 136	Practical- Structural Geology	
GEO CC 137	Practical- Topographical	
GEO SE 131	Seminar	

II Semester

Course no.	Course Name	Expected Learning Outcomes
GEO CC 231	Applied Micropaleontology	The students will develop capability to transform the 'taxonomic aspects' of microfossils into higher 'resolution biostratigraphy, and aspects like 'oil-exploration', 'paleo-monsoonal studies' etc. through 'reconstructing the environment of sedimentation' based on 'their paleo-ecological aspects.
GEO CC 232	Practical Applied Micropaleontology	
GEO CC 233	Stratigraphy -I (Precambrian)	The manifestation of the course, if completed successfully, would give a deep insight in to the general stratigraphy and Precambrian Geology with special reference to a detailed field work in Bundelkhand craton. It also enables the students to link events and to correlate them successfully at several scales.

GEO CC 234	Stratigraphy- II (Phanerozoic)	The manifestation of the course, if completed successfully can be reflected in the form of an insight as to how earth has behaved during Phanerozoic eon that in turn covers significant part of the geological time. It also enables the students to link events and to correlate them at several scales.
GEO CC 235	Geological Field Work & Mapping	
GEO SE 231	Seminar	

GEO OE 231	Mineral Resources	The manifestation of the course, if completed successfully can be reflected in the form of an insight as to what kinds
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III Semester

Course no.	Course Name	Expected Learning Outcomes
GEO CC 331	Igneous Petrology	The course definitely provides better capability to transform the processes and principles involved during the origin and
GEO CC 332	Practical- Igneous Petrology	0
GEO CC 333	Sedimentology	The course aims to provide better capability to visualize the processes and principles involved during the origin and evolution of the sedimentary rocks.
GEO CC 334	Practical- Sedimentology	0
GEO CC 335	Ore Geology	The course definitely provides better capability to understand the processes and principles involved during the origin and
GEO CC 336	Practical- Ore-Microscopy &	0
GEO EC 331	Industrial Minerals & Fuels	The course definitely provides better capability to understand the processes and principles involved during formation of Industrial Mineral & Fuels
GEO SE 331	Seminar	0

GEO OE 331	Paleontology	The students will develop capability to visualize the 'evolution of life' and its applications in interpreting of
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IV Semester

Course no.	Course Name	Expected Learning Outcomes
GEO CC 431	Metamorphic Petrology & Thermodynamics	The course definitely provides better capability to transform the processes and principles involved during the origin and evolution of the Metamorphic Petrology & Thermodynamics rocks.
GEO CC 432	Practical-Metamorphic Petrology	
GEO CC 433	Geochemistry	Demonstrate proficiency in common practical data handling skills in geochemistry. Plan and carry out appropriate mathematical strategies for solving geochemical problems. Synthesize the results of their problem-solving with other work in the form of short, well-organized articles. Critique possible over simplifications in geochemical models.
GEO CC 434	Practical- Geochemistry	0
GEO CC 435	Geodynamics & Tectonics	Students will gain an in-depth understanding of the mechanics of the lithosphere, deformation, stress, fluid mechanics as it applies to the Earth's interior, including thermal convection. Students will derive analytical solution to simplified problems that reveal the fundamental characteristics of more complex geodynamical models and provide a toolkit to interpret geological observations (Knowledge of advanced mathematics, typically including differential equations, linear algebra, complex variables, and discrete mathematics) Students will understand the relation between physics concept, especially continuum mechanics and (laminar) fluid dynamics, and geological observations (Interdisciplinary understanding)

GEO SE 431	Seminar	0
GEO CC 436	Geological Tour Report (Eco. Geol. & Petro.) & Field <i>Viva Voce</i>	0

V Semester

Course no.	Course Name	Expected Learning Outcomes
GEO CC 531	Ground Water Hydrology	The course definitely provides better capability to transform the processes and principles involved under Groundwater Hydrology
GEO CC 532	Practical Groundwater & Hydrology	0
GEO CC 533	Exploration Geology	The manifestation of the course, if completed successfully can be reflected in the form of an insight in to the technology based mineral resource management. Additionally, the course provides a professional skill to interpret seismic, gravity and magnetic anomaly maps along with an insight in to the sample planning strategy for geochemical mapping.
GEO CC 534	Mining Geology	The course definitely provides better capability to understand the processes and principles of Mining Geology.
GEO CC 535	Practical Mining and Exploration Geology	0
GEO CC 536	Geoinformatics	The course definitely provides better capability to transform the processes and principles involved in remote sensing, GIS and GPS as well as their integrated applications in different of fields of Geology.
GEO CC 537	Practical Geoinformatics	0
GEO SE 531	Seminar	0
GEO SE 532	Seminar: Advanced Instrumentation and techniques in geosciences	0

VI Semester

Course no.	Course Name	Expected Learning Outcomes
GEO 631 CC	Environmental Geology	The course definitely provides better capability to understand the processes and principles of Environmental Geology
GEO 632 CC	Engineering Geology & Geotechniques	The course definitely provides better capability to understand the processes and principles of Engineering Geology & Geotechniques.
GEO 633 CC	Practical Engineering & Environmental Geology	0
GEO EC 631	Mineral Economics	The course definitely provides better capability to understand the processes and principles of Mineral Economics
GEO 631 SE	Seminar	0
GEO 634 CC	Dissertation on Mineral Exploration & <i>Viva-Voce</i>	0