



BISHOP KURIALACHERRY COLLEGE FOR WOMEN
AMALAGIRI, KOTTAYAM, 686561

Affiliated to Mahatma Gandhi University, Kottayam, Kerala

Re - accredited by NAAC with A+ Grade & NIRF 2023 Rank-Band 101-150

MSC GEOLOGY

PROGRAMME SPECIFIC OUTCOME

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COURSE OUTCOME

M Sc Geology

PSO	Programme Specific Outcome	PO
1	Understand the different concepts in physical geology, petrology, mineralogy, hydrology, paleontology, structural geology and apply this knowledge to carry out field works.	1,3,4
2	Megascopically and microscopically identify rocks and minerals in field as well as in laboratory. Design and develop geological maps, geological cross section to understand subsurface Geology. Identify and interpret different geological, geomorphic and structural features in the field and in maps.	1,4,5,6,10
3	Apply the concepts of exploration geology like prospecting, exploration, ore reserve estimation, drilling methods to analyze the occurrence, extent and significance of ore deposits and fossil fuels.	4,8
4	Understand the fundamental concepts of environmental geology and climatology. Distinguish different aspects of geology leads to the changes earth is undergoing in the present scenario and their consequences.	1,3,8
5	Acquire a comprehensive understanding of disasters and the field of disaster management. Apply social work values, principle and methods in practical situations.	3,8,9
6	Understand the significance of the availability, scarcity, occurrence and storage of water resources for the sustenance of life. Aware people about the value of materials which are much precious to maintain sustainable life and also about consequences of pollution.	2,6,8
7	Learn how to use equipments to collect data for field works as well laboratory analysis and develop practical skills in field and GIS software, develop aptitude skill and problem solving skills, self confidence for better carrier.	1,3,4,6

Course	Details				
Code	GL010101				
Title	Geomorphology and Geomatics				
Degree	M.Sc				
Branch(s)	Geology				
Year/Semester	First Semester				
Type	Core				
Credits	4	Hrs/Week	5	TotalHours	90

CO No.	Expected Course Outcomes <i>Upon completion of this course, the students will be able to:</i>	Cognitive Level	PSO No.
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1	Understanding on the various aspects and methods of information technology in daily life.	U	1, 2, 7
2	Focus on its applications in delineating the geomorphological characteristics of planetary bodies.	A	5, 7
3	These studies have a significant role in the planning and implementation of all development projects	C	2, 4, 7
4	Purpose is to make the students able to handle the GIS software which has been used in this platform.	A	3, 4, 5

Course	Details				
Code	GL010102				
Title	Applied Mineralogy				
Degree	M.Sc				
Branch(s)	Geology				
Year/Semester	First Semester				
Type	Core				
Credits	4	Hrs/Week	5	Total Hours	90

CO No.	Expected Course Outcomes <i>Upon completion of this course, the students will be able to:</i>	Cognitive Level	PSO No.
1	Detailed understanding of minerals; their origin, structure, composition and properties	U	1, 2
2	Focuses on the analytical methods used in the chemical analysis of minerals.	A	1, 2
3	Explain the concepts in geochemical and petrological studies and interpret the mineralogical concepts.	A	2, 3

Course	Details				
Code	GL010103				
Title	Structural Geology and Tectonics				
Degree	M.Sc				
Branch(s)	Geology				
Year/Semester	First Semester				
Type	Core				
Credits	4	Hrs/Week	6	Total Hours	108

CO No.	Expected Course Outcomes <i>Upon completion of this course, the students will be able to:</i>	Cognitive Level	PSO No.
1	It aims at the advanced study of the structures in rocks with respect to change in stress strain scenario. It includes analyses of faults, folds, and other structures associated with shear zones & poly deformed rocks	A	1, 2
2	It give detailed understanding of structural mapping methods, and structural analysis using various graphical representations	A	2
3	It focuses on the study of present tectonic scenario & evolution of the Indian Plate.	R	1 4

Course		Details			
Code	GL010104				
Title	Stratigraphy and Quaternary Geology				
Degree	M.Sc				
Branch(s)	Geology				
Year/Semester	First Semester				
Type	Core				
Credits	3	Hrs/Week	5	TotalHours	90

CO No.	Expected Course Outcomes <i>Upon completion of this course, the students will be able to:</i>	Cognitive Level	PSO No.
1	Recognize and describe the knowledge on different types of conventional and advanced stratigraphic approaches in studying the earth history.	U	1,2
2	It instantiate a deeper knowledge in the Precambrian and Phanerozoic stratigraphy of Earth with significant reference to India	E	1,2
3	Quaternary Geology aims understanding different facts and inference, determine various dating techniques and important processes in Quaternary period.	A	1, 2,4

Course		Details			
Code	GL010201				
Title	Igneous and Metamorphic Petrology				
Degree	M.Sc				
Branch(s)	Geology				
Year/Semester	Second Semester				
Type	Core				
Credits	4	Hrs/Week	6	TotalHours	108

CO No.	Expected Course Outcomes <i>Upon completion of this course, the students will be able to:</i>	Cognitive Level	PSO No.
1	Igneous Petrology offers the students a detailed illustration about the magma, its characteristics, diversity and its generation in the view point of different tectonic settings.	A	1,2,
2	Discuss experimental models for the crystallization – melting process in the deep crust and in the mantle	U	1,2
3	Understanding of the important igneous rock types found on earth with relevance to its petrogenesis	A	1,2,4
4	Metamorphic petrology focus on deep understanding in metamorphic processes and reactions.	A	1,2
5	Determine knowledge in experimental petrology, structure of geothermobarometry and relation between metamorphism and plate tectonics.	A	1,2

Course		Details			
Code	GL010202				
Title	Sedimentology and Geostatistics				
Degree	M.Sc				
Branch(s)	Geology				
Year/Semester	Second Semester				

Type	Core				
Credits	4	Hrs/Week	5	TotalHours	90

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CO No.	<i>Expected Course Outcomes</i> <i>Upon completion of this course, the students will be able to:</i>	Cognitive Level	PSO No.
1	This course produces a solid foundation in basic principles and concepts of Sedimentology	E	1,2,3
2	Focus and distinguish different sedimentary processes, environments of deposition and tectonic settings of sedimentary basins	A	1,2
3	It construct a model of the ideas of texture and structure of sedimentary rocks by providing analytical tools and statistical methods and nature of evidence to make the students capable in interpreting the sedimentary history.	A,	1,2,3

Course	Details				
Code	GL010203				
Title	Geochemistry and Isotope Geology				
Degree	M.Sc				
Branch(s)	Geology				
Year/Semester	Second Semester				
Type	Core				
Credits	4	Hrs/Week	5	TotalHours	90

CO No.	<i>Expected Course Outcomes</i> <i>Upon completion of this course, the students will be able to:</i>	Cognitive Level	PSO No.
1	Understand and identify the decay schemes of radiogenic and stable isotopes	U	2
2	The isotopic systems will be explained with significant characteristics of evolution of Earth and Earth processes	A	1, 2
3	This course will give clarity to students to understand, analyze and conclude the geological history of Earth and rock systems through current isotopic and geochemical signatures.	E	1, 2

Course	Details				
Code	GL010204				
Title	Climatology and Marine Geology				
Degree	M.Sc				
Branch(s)	Geology				
Year/Semester	Seond Semester				
Type	Core				
Credits	3	Hrs/Week	5	TotalHours	90

CO No.	<i>Expected Course Outcomes</i> <i>Upon completion of this course, the students will be able to:</i>	Cognitive Level	PSO No.
1	Understand and discuss various aspects of Marine Geology. Provides detailed knowledge on fundamentals of Climatology and Oceanography.	U	1, 4, 6

2	Detailed descriptions on various marine expeditions, marine environments, depositional & erosional processes, origin of oceanic basins and morphologic features, marine mineral resources.	U	1
3	Comprehensive knowledge in offshore geologic sampling & ocean floor survey methods, Eustatic sea level changes and Law of the Sea	A	1, 6, 7

Course		Details			
Code	GL010201				
Title	Exploration Geology and Geophysics				
Degree	M.Sc				
Branch(s)	Geology				
Year/Semester	Third Semester				
Type	Core				
Credits	4	Hrs/Week	6	TotalHours	108

CO No.	Expected Course Outcomes <i>Upon completion of this course, the students will be able to:</i>	Cognitive Level	PSO No.
1	The course mention about various geological prospecting and mineral exploration methods	R	2,3,4,
2	It discuss stages of exploration, grading of ores, construct a drilling programme designing and ore reserve estimation.	E	2,3,5
3	Catagorize various geochemical survey methods and atmospheric & geobotanical survey techniques are implemented..	Ap	2,4,7
4	The main idea of geophysical prospecting methods is to find out the occurrence and extent of ore deposits and recognize application and limitations of this methods	A	2,5,7

Course		Details			
Code	GL010302				
Title	Advanced Economic Geology				
Degree	M.Sc				
Branch(s)	Geology				
Year/Semester	Third Semester				
Type	Core				
Credits	4	Hrs/Week	6	TotalHours	108

CO No.	Expected Course Outcomes <i>Upon completion of this course, the students will be able to:</i>	Cognitive Level	PSO No.
1	Differentiate Physio- chemical environment of ore formation- source, migration and traps in ore formation.	A	2, 3
2	Classify origin of economic minerals deposits, its identification, properties, and describe the distribution in India	U	2, 3 5
3	The student will be familiar with how, where, and when Earth's most important ore deposits have formed, and basic concepts of mineral deposit modeling	Ap	2,3,5,7
4	This course also aims to explain standard procedures and knowledge in reflective light optics and ore textures.	A	2,3,5

Course	Details
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Code	GL010303				
Title	Mining and Engineering Geology				
Degree	M.Sc				
Branch(s)	Geology				
Year/Semester	Third Semester				
Type	Core				
Credits	4	Hrs/Week	4	TotalHours	72

CO No.	<i>Expected Course Outcomes</i> <i>Upon completion of this course, the students will be able to::</i>	Cognitive Level	PSO No.
1	It provides a proper understanding on various mining terminologies and different methods practiced in alluvial, opencast and underground mining according the type of deposits.	A	1, 2, 3
2	These studies also provide basic information on mineral dressing, mining plans and mineral policies.	A	3
3	Engineering Geology offers the basic concepts and its application in engineering practices	Ap	6
4	It intends to make the students able to identify the suitable sites for different engineering constructions, identify potential geological hazards and manage various structures to prevent and control them	A	6, 7

Course	Details				
Code	GL010304				
Title	Hydrogeology				
Degree	M.Sc				
Branch(s)	Geology				
Year/Semester	Third Semester				
Type	Core				
Credits	3	Hrs/Week	5	TotalHours	90

CO No.	<i>Expected Course Outcomes</i> <i>Upon completion of this course, the students will be able to::</i>	Cognitive Level	PSO No.
1	It offers proper understanding on various aspects of surface water and groundwater, and covers various aquifer and water quality analyses.	A	1
2	It also provides detailed knowledge about well hydraulics, investigation & exploration methods of groundwater, and the causes & remedies for saline water intrusion.	A	5, 6
3	It has significant role in the planning and implementation of projects related to hydrogeology.	Ap	6, 7

Course	Details				
Code	GL800401				
Title	Fuel Geology and Micropalaeontology				
Degree	BSc.				
Branch(s)	Geology				
Year/Semester	Fourth Semester				
Type	Core				
Credits	4	Hrs/Week	6	TotalHours	126

CO No.	<i>Expected Course Outcomes</i> <i>Upon completion of this course, the students will be able to::</i>	Cognitive Level	PSO No.
1	It offers detailed study about natural fuels like coal and petroleum, their formation and distribution especially in Indian sedimentary basins.	U	1, 2
2	This course also intended to make the students aware about unconventional energy resources like shale gas, CBM and gas hydrates.	Ap	2
3	It will also discuss different exploration and extraction techniques used in petroleum industry	Ap	3
4	A part of this course includes detailed study of microfossils such as foraminifera, radiolarian, diatoms and ostracods.	U	1
5	Aim of this course is to make students familiar with the processes, terms and works happening in petroleum industry	A	3, 7

Course	Details				
Code	GL800402				
Title	Advanced Palaeontology				
Degree	M.Sc				
Branch(s)	Geology				
Year/Semester	Fourth Semester				
Type	Core				
Credits	3	Hrs/Week	5	TotalHours	126

CO No.	<i>Expected Course Outcomes</i> <i>Upon completion of this course, the students will be able to::</i>	Cognitive Level	PSO No.
1	The course intends systematic study of Paleontology since the origin of life.	U	1
2	It is mainly focused on concepts and theories of evolution and vertebrate paleontology.	U	1, 4
3	It deals with the early life forms and evolutionary history of Trilobites, Graptolites and Ammonites.	U	1
4	The vertebrate evolution includes the evolution of Pisces, Amphibians, Reptiles, Birds, Elephants and Homo Sapience	U	1
5	The course also covers stable isotope studies in Paleontology, important forms of Siwalik Vertebrates and Palynology	A	1

Course	Details				
Code	GL800403				
Title	Environmental Geology and Disaster Management				
Degree	M.Sc				
Branch(s)	Geology				
Year/Semester	Fourth Semester				
Type	Core				
Credits	4	Hrs/Week	5	TotalHours	126

CO No.	<i>Expected Course Outcomes</i> <i>Upon completion of this course, the students will be able to::</i>	Cognitive Level	PSO No.
1	It offers an understanding on the fundamental concept of environmental geology.	U	1, 4
2	It is intended to create awareness on environmental laws and environmental protection acts.	U	6
3	It will also provide awareness about the disaster management system.	Ap	5, 6