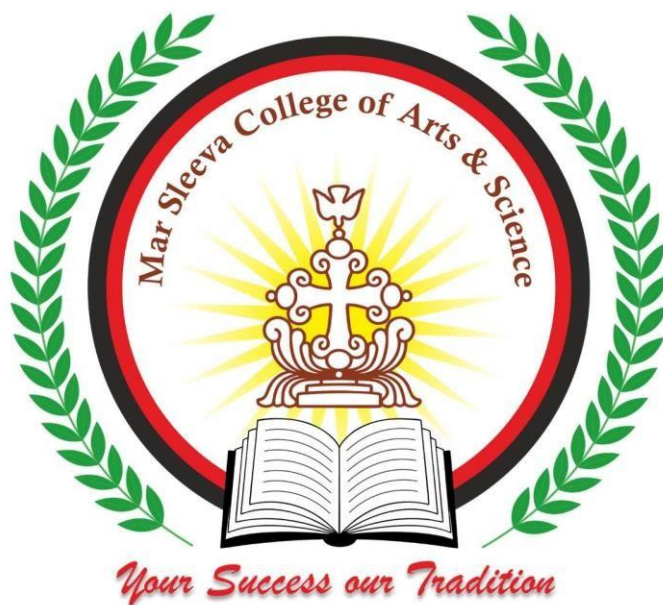


MAR SLEEVA COLLEGE OF ARTS AND SCIENCE MURICKASSERY,

RAJAMUDYPO

(Affiliated To Mahatma Gandhi
University, Kottayam)



PROGRAMME OUTCOMES
PROGRAMME SPECIFIC OUTCOMES
&
COURSE OUTCOMES

B.SC. GEOLOGY

Programme Outcomes

Students of B.Sc. Geology under graduate degree programme at the time of graduation will be able to:

- PO1** Self-directed and Life-long Learning: Self-equipped to engage in independent and life-long learning in the broadest context of sociocultural and technological changes.
- PO2** Effective Communication: Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.
- PO3** Effective Social Interaction: Elicit views of others, mediate disagreements and help reach conclusions in group settings.
- PO4** Evaluative Thinking: Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.
- PO5** Ideal Citizenship: Demonstrate empathetic social concern and equity centered national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.
- PO6** Environment and Sustainability: Understand the issues of environmental contexts and sustainable development.
- PO7** Project Work and Oral Examination: Equip students to demonstrate their own work and to investigate their awareness in relation to the wider research field

Programme Specific Outcomes

- PSO1** Understand the concepts and significance of the various geological phenomena.
- PSO2** To ensure that the students are equipped with expertise to make use of the opportunities and to tackle the challenges in the field of Geology.
- PSO3** To gain the knowledge of Geology through theory and practicals.

PSO4 Identify and list out common minerals and rocks.

PSO5 To gain knowledge through the field training programme.

PSO6 Enhance the student's academic abilities, personal qualities and transferable skills to develop as responsible citizens.

PSO7 Motivate students to higher studies and research in different areas of pure and applied Geology.



SEMESTER I

Course code	Course Title	Course Outcome	
EN1CCT01	FINE TUNE YOUR ENGLISH	CO1	Identify the basic sentence structures
		CO2	Construct proper sentences without grammatical errors
		CO3	Demonstrate the difference between various tense forms
		CO4	Select the appropriate vocabulary for a given context
		CO5	Construct a good resume or letter according to the specifications given
EN1CCT02	PEARLS FROM THE DEEP	CO1	Identify the different genres of literature
		CO2	Interpret the underlying themes of the various works of fiction
		CO3	Compare and contrast between the poetry of different literary ages
		CO4	Judge the merits of poetry based on its environmental significance
		CO5	Use rhetorical language in expressive forms of writing
ML1CCT01	KADHASAHIT HYAM	CO 1	Understand Malayalam literature and its aesthetic quality
		CO 2	Analyze the culture and history of Kerala and its relation to literature
		CO 3	Identify new literary trends in Malayalam fiction
		CO 4	Use language effectively in day-to-day interactions
MM1CMT01	PARTIAL DIFFERENTIATION, MATRICES, TRIGONOMET	CO 1	Identify functions of different variables and acquire knowledge in partial differentiation
		CO 2	Discover Solutions for Homogeneous and Non Homogeneous linear equations and discuss about Cayley Hamilton Theorem and its applications.
		CO 3	Identify the hyperbolic and Circular functions and Summation of different types of series

	RY AND NUMERICAL METHODS	CO 4	Discover solutions to algebraic and transcendental equations using different methods
PH1CMT02	PROPERTIES OF MATTER AND THERMODYN AMICS	CO1	Define states of matter
		CO2	Construct an idea of properties of solids and illustrate the use of material with their properties.
		CO3	Develop the following concepts and solve problems involving them a. Hooke's Law and other stress-strain laws b. Determination of rigidity modulus c. Uniform and Non- uniform bending
		CO4	Construct an idea of properties of liquids and explain different phenomena associated with it.
		CO5	Explain the motion of fluids by developing understanding of viscosity, Poiseuille's Law and Bernoulli's Equation.
		CO6	Illustrate the laws of thermodynamics, understand its implications and Explain cyclic processes and apply this to heat engines.
GL1CRT01	METHODOLOGY AND PERSPECTIVE IN GEOLOGY	CO1	Understand the significance of various branches of Geology.
		CO2	Understand and explain endogenic process, the theories and hypothesis of plate tectonics
		CO3	Ideas of plate boundaries, plate movements and association of Geological features.
		CO4	Understanding and explain mountains, volcanoes ,earthquake and elastic rebound theory

Your Success our Tradition

SEMESTER II			
EN2CCT03	Issues that Matter	CO1	Identify the issues related to war and the ability of mankind to survive adversities
		CO2	Construct proper insights regarding the pressing contemporary issues of identity of minorities and other marginalized sections in our society.
		CO3	Demonstrate ecological values and apply the knowledge on sustainable development in life

			situations
		CO4	Understand the limits of free speech and generalize the rules of appropriate forms of verbal and written expression
EN2CCT04	SAVOURING THE CLASSICS	CO1	Develop independent thinking and universal human values through best pieces of literature in English
		CO2	Use figurative and emotive language for expressive communication
		CO3	Construct critical thinking and imagination through different representative samples of classical literature.
		CO4	Outline the structural features and themes of poems, drama, short story and novel to enjoy reading them in a better way
ML2CCT02	KAVITHA	CO1	Identify different writing styles and trends in poetry
		CO2	Appreciate and enjoy poem by critical thinking
		CO3	Analyse the use of literary techniques in the poems
		CO4	Gain awareness on social issues of gender, caste, and environmental degradation through poems and their inherent themes
MM2CMT01	INTEGRAL CALCULUS AND DIFFERENTIAL EQUATIONS	CO1	Discover the volume of solids using Cross Sections and examine the length of an arc of a curve whose equation is in parametric form.
		CO2	Illustrate the area and volume by applying the technique of double and triple integral.
		CO3	Solve first-order linear differential equations
		CO4	Devise the origin of first-order partial differential equations and solve linear partial differential equations of the first order.
PH2CMT02	MECHANICS	CO1	Discuss the physical quantities of accelerated motion of objects.

	AND SUPERCONDU CTIVITY	CO2	Describe the concept of wave motion and able to construct different models describing wave motion.
		CO3	Explain different terms associated with rotational mechanics and obtain solutions to physical problems of rotational mechanics.
		CO4	Assess the moment of inertia of different structures using parallel and perpendicular axes theorem.
		CO5	Explain oscillatory motion and design and classify different oscillators.
GL2CRT02	GEOMORPHOL OGY	CO1	Understand and explain exogenic process, emphasis on weathering, soil and mass wasting
		CO2	Understand and explain the different geological agents
		CO3	Ideas of plate boundaries, plate movements and association of Geological features.
		CO4	Understanding and explain mountains, volcanoes ,earthquake and elastic rebound theory

SEMESTER III

EN3CCT05	LITERATURE AND/AS IDENTITY	CO1	Develop an interest in exploring literature belonging to other languages.
		CO2	Gain knowledge on multiple identities and its representations in world literature.
		CO3	Analyze the life writings of authors to familiarize the various aspects of portraying the identities in spite of gender and racial biases
		CO4	Appreciate the creative use of language in literature.
		CO5	Create an open mindset to accommodate people of different cultures, ethnicity, colour, gender, social status
ML3CCT03	DRISHYAKAL ASAHITHYA M	CO1	Appreciate and enjoy the richness of visual art forms of Kerala
		CO2	Develop basic knowledge in drama, film making, and other visual art forms in Kerala
		CO3	Identify the writing styles, techniques, and specialties of specific authors

		CO4	Analyze the aesthetic and structural elements of cinema and drama
MM3CMT01	VECTOR CALCULUS, ANALYTIC GEOMETRY, AND ABSTRACT ALGEBRA	CO1	Interpret Vector Fields.
		CO2	Illustrate gradient vector fields and find potential functions and assess the line integrals, surface area, and surface integrals.
		CO3	Identify properties and equations of conic sections.
		CO4	Illustrate the concept of Groups which serve as one of the fundamental building blocks for the subject called abstract algebra.
PH3CMT02	MODERN PHYSICS AND MAGNETISM	CO1	Explain different atom models and its basic features.
		CO2	Describe atomic nucleus and classify the nucleus according to their properties and salient features. Explain radioactivity and discuss different aspects of nuclear energy in nuclear reactors and radio carbon dating.
		CO3	Identify the main aspects of the historical development of quantum mechanics and discuss and interpret experiments that reveal the wave properties of matter
		CO4	Explain the central concepts and principles in quantum mechanics, such as the Schrödinger equation, the wave function and its statistical interpretation, the uncertainty principle, stationary and non-stationary states, time evolution of solutions.
		CO5	Describe the properties of materials and application of semiconductor electronics. Apply the knowledge of semiconductors to illustrate the functioning of basic electronic devices.
GL3CRT03	CRYSTALLOGRAPHY AND PHYSICAL MINERALOGY	CO1	Understand the elements of crystallography , morphology and symmetry of crystals, law of crystallography and the types of crystal form
		CO2	Understand and describe the symmetry ,simple forms and combination of different crystal classes
		CO3	Elucidate the various aspects of twinning in crystals
		CO4	Explanation of basic ideas of mineralogy and describe the physical properties of minerals

SEMESTER IV

EN4CCT06	ILLUMINATIONS	CO1	Develop a positive attitude towards life through the inspiring life stories of great personalities
		CO2	Critically analyse the conventional understanding of concepts such as happiness and courage
		CO3	Redefine gender by the unconventional reading of short stories
		CO4	Appreciate poems of revolutionary magnitude by Canonical/Non canonical poets
		CO5	Construct alternative points of view on life and success by gathering inspiration from famous speeches from around the world.
ML4CCT04	GADHYA RACHANAKAL	CO1	Compare and contrast different styles and techniques of narrations
		CO2	Develop Language skills like reading, writing, speaking and critical thinking
		CO3	Identify the basic structure of biography, autobiography and literary criticism as distinct forms in literature
		CO4	Acquire ethical and cultural values through the close reading of themes inherent in prose
MM4CMT01	FOURIER SERIES, LAPLACE TRANSFORMS AND COMPLEX ANALYSIS	CO1	Understand the idea of periodic functions, and trigonometric series and solve the Fourier series of functions of any period.
		CO2	Illustrate Laplace transform as an efficient method for solving certain types of differential and integral equations.
		CO3	Extract the concept of analytic functions, elementary complex functions, and their properties.
		CO4	Interpret the concept of complex integration and apply the theory and techniques of complex integration in problem-solving situations.
PH4CMT02	OPTICS AND SOLID STATE PHYSICS	CO1	Discuss the interference phenomenon and explain the significance of it by illustrating examples. Resolving numerical examples of interference in different context
		CO2	List out different types of diffraction and categorise various physical problems of diffraction.

		CO3	Explain the concept of polarization and describe various theorems of it. Design and illustrate Polaroids and find the applications of it.
		CO4	Explain the working of laser and compare different types of lasers. Predict the applications of lasers. Illustrate the working of Optical Fiber by designing a working model of it.
		CO5	Discuss dielectric material and its properties.
		CO6	Develop an understanding-crystal structure and crystallographic techniques.
GL4CRT04	MINERALOGY	CO1	To understand basic principles of Optical Mineralogy and Petrological Microscope
		CO2	To describe Polymorphism, Isomorphism, Pseudomorphism, Solid solution and Exsolution in minerals.
		CO3	To categorize minerals into different classes.
		CO4	To interpret and compare silicate structures and associated mineral groups
		CO5	To systematically assess different rock forming silicate minerals (both megascopic and microscopic study).
		CO6	To categorize and appraise major non-silicate minerals (both megascopic and microscopic study).

SEMESTER V

GL5CRT05	STRATIGRAPHY AND SEDIMENTARY PETROLOGY	CO1	To understand guiding principles of stratigraphy.
		CO2	To examine geological evolution of the Earth using Geological Time Scale
		CO3	To assess processes involved in origin of sediments and sedimentary rocks.

GL5CRT06	IGNEOUS PETROLOGY	CO4	To categorize sedimentary rocks into different classes (both megascopic and microscopic study).
		CO5	To systematically study different sedimentary rocks (both megascopic and microscopic study).
		CO1	To understand origin of magma, Bowen's reaction series and evolution of igneous rocks.
		CO2	To distinguish between different magmatic differentiation processes along various tectonic settings.
		CO3	To categorize different forms of igneous rocks.
		CO4	To categorize structures and textures of igneous rocks.
		CO5	To systematically study different igneous rocks (both megascopic and microscopic study).
GL5CRT07	METAMORPHIC PETROLOGY AND GEOCHEMISTRY	CO1	To understand factors of metamorphism and metasomatic
		CO2	To assess importance of grade, zone concepts and metamorphic differentiation.
		CO3	To categorize different textures and types of metamorphism.
		CO4	To explain the relation between geochemistry and metamorphism
		CO5	To systematically study different metamorphic rocks (both megascopic and microscopic study)..
GL5CRT08	ENVIRONMENTAL GEOLOGY	CO1	To understand the scope of environmental studies and role of geology in it.
		CO2	To assess importance of natural resources and its conservation
		CO3	To understand environmental pollution and its laws.
		CO4	To explain EIA and its importance.
		CO5	To evaluate human rights in special reference to women and children.
		CO6	To analyse various environmental consequences of natural hazards like earthquake, flood, tsunami, landslide and draught through seminar presentation in digital platforms (PowerPoint).

SEMESTER VI

GL6CRT09	STRUCTURAL GEOLOGY	CO1	To understand the attitude of geologic structures and primary and secondary structures
		CO2	To assess the stages of rock deformation and discuss the concept of Spherical and Stereographic Projection.
		CO3	To analyze the folds and faults and identify categories based on geometry and genesis.
		CO4	To analyze foliation, lineation and joints in rocks
		CO5	To analyze and interpret geological maps.
GL6CRT10	PHANEROZOIC STRATIGRAPHY OF INDIA	CO1	To understand Geological Time Scale in relation to Indian Phanerozoic Stratigraphy, Study of sedimentary basins in India.
		CO2	To analyze and study the Paleozoic succession of India
		CO3	To analyze and study the Mesozoic succession of India.
		CO4	To analyze and study the Cenozoic succession of India.
		CO5	To analyze the sedimentary basins of India based on Hydrocarbon potential.
GL6CRT11	PALAEOONTOLOGY	CO1	To understand life through geologic history, methods of fossilization, types and use of fossils.
		CO2	To analyze and study morphology, classification and geologic history of Phylum Arthropoda.
		CO3	To analyze and study morphology, classification and geologic history of Phylum Brachiopoda and Echinoidea.
		CO4	To analyze and study morphology, classification and geologic history of Phylum Mollusca
		CO5	To examine the concepts of Micropaleontology including Palynology
		CO6	To identify and describe morphological features of Pelecypods, Gastropods, Cephalopods, Brachiopods, Echinoids, Trilobites, Glossopteris and Ptillophyllum.
GL6CRT12	ECONOMIC GEOLOGY	CO1	To understand the scope of economic geology and various terminology related economic mineral resources.
		CO2	To assess formation of mineral deposits by internal processes (magmatic, hydrothermal, contact

			metasomatic and metamorphic deposits).
		CO3	To assess formation of mineral deposits due to external/surface process (evaporate, sedimentary, oxidation and supergene enrichment and volcanic exhalative deposits).
		CO4	To examine the distribution, mode of occurrence and uses of ore minerals and industrial minerals in India.
		CO5	To identify and describe important ore minerals and industrial minerals.
GL6CBT01	GEOTECTONICS AND PRECAMBRIAN STRATIGRAPHY OF INDIA	CO1	To understand gross tectonic features of continents.
		CO2	To analyze the concepts of plate tectonics and its relation to igneous activities
		CO3	To categorize and analyze the features of Dharwar Craton of India
		CO4	To analyze the structural features of mobile belts and high-grade terrains of India, including Precambrian rocks of Kerala.
		CO5	To analyze the general stratigraphic features of Vindhyan and Cuddapah Supergroup



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