Programme Specific Outcomes (PSOs) and Course Outcomes (COs)

Programme

BSc Geology

Government College Kasaragod

(Affiliated to Kannur University)
Vidyanagar, Kasaragod District
Kerala-671123
Email:principal@gck.ac.in,
principalgcksd@gmail.com
Website: https://gck.ac.in

Contents (click

PROGRAMME OUTCOMES

PO 1. Critical Thinking:

1. Acquire the ability to apply the basic tenets of logic and science to thoughts, actions and interventions.
2. Develop the ability to chart out a progressive direction for actions and interventions by learning to recognize the presence of hegemonic ideology within certain dominant notions.
3. Develop self-critical abilities and also the ability to view positions, problems and social issues from plural perspectives.

PO 2. Effective Citizenship:

1. Learn to participate in nation building by adhering to the principles of sovereignty of the nation, socialism, secularism, democracy and the values that guide a republic.
2. Develop and practice gender sensitive attitudes, environmental awareness, the ability to understand and resist various kinds of discriminations and empathetic social awareness about various kinds of marginalisation.
3. Internalise certain highlights of the nation's and region's history. Especially of the freedom movement, the renaissance within native societies and the project of modernisation of the post- colonial society.

PO 3. Effective Communication:

1. Acquire the ability to speak, write, read and listen clearly in person and through electronic media in both English and in one Modern Indian Language
2. Learn to articulate analysis, synthesis, and evaluation of situations and themes in a well- informed manner.
3. Generate hypothesis and articulate assent or dissent by employing both reason and creative thinking.

PO 4. Interdisciplinarity:

1. Perceive knowledge as an organic comprehensive, interrelated and integrated faculty of the human mind
2. Understand the issues of environmental contexts and sustainable development as a basic interdisciplinary concern of all disciplines.

3. Develop aesthetic, social, humanistic and artistic sensibilities for problem solving and evolving a comprehensive perspective.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

PSO 1:Speak, read, write and listen clearly in person and through electronic media in Arabic.

PSO 2:Understand and apply the method of translation from Arabic to English and vice versa.

PSO 3:Understand and apply Arabic Grammar Rhetoric and Prosody.

PSO 4:Understand ancient and modern Arabic literature.

COURSE OUTCOMES (PSOs)

1B01 GEO Physical Geology and Global tectonics

CO 1: Understand various branches of geology, solar system, Physical parameters of earth and internal structure of earth, Exogenic and endogenic processes, concept of rock cycle.

CO2: Understand the geological work and land forms developed by rivers, wind and glaciers

CO3: Understand the geological work and land forms developed by oceans and seas, groundwater, origin and classification of lakes, backwaters of Kerala.

CO4: Understand mechanism and causes of volcanoes and earthquakes, seismic waves and distribution earthquakes and volcanoes.

CO5 Understand the continental drift hypothesis and concepts of plate tectonics, types and characteristics of plate margins, and causes of plate motion

CO6: Understand the mountain building process in relation to plate tectonics, classification of mountains, concept of isostasy, and Himalayan orogeny

2B02 GEO Structural Geology

CO 1: Understand the attitude of beds/geological structures, outcrop patterns, Rule of V's, measuring strike and dip of rock layers using Brunton compass and Clinometer, representation of relief & structural features in geological maps and factors of rock deformation

CO2: Understand the geometry and classification, terminology, mechanism of formation of folds and criteria for their recognition in the field and map

To study the geometry, classification, terminology, mechanism of faulting, and criteria for the recognition of fault in the field and map

CO3: Understand the mechanism of formation, and types of foliation and lineation

CO4: Understand joints in rocks and their origin, classification and geological significance, the unconformities, their types and identification in the field and map.

3B03 GEO Crystallography

CO 1: Understand morphology of crystals, crystal symmetry, various crystal angles and instrument to measure crystal angles.

CO2: Understand crystallographic axes and six crystal systems by comparison, crystal parameters and notations and evaluates various crystal forms.

CO3:Understand simple and combination forms of isometric and tetragonal crystal systems.

CO4: Understand simple and combination forms of hexagonal, orthorhombic, monoclinic and triclinic crystal systems.

CO5 Differentiate twin crystals with elements of twinning, twin axis, twin plane and compositional plane giving examples, imperfections in crystals and basic aspects of crystal projection with special reference to stereographic projection.

4B04 GEO Mineralogy

CO 1: Understand minerals and mineraloids, physical properties of minerals, types of bonding in atoms , arrangement of atoms in minerals and related changes in internal arrangement and external forms.
CO2: Understand properties of light and related optical properties of minerals, petrological microscope and accessories.
CO3: Understand classification and major physical and optical properties of common non – silicate minerals.
CO4: Understand structure and classification of silicate minerals with detailed physical, chemical and optical properties.3B04CSC

5B06 GEO Igneous Petrology

CO 1: Understand lava flows, types and structure of igneous rocks and rock cycle.
CO2: Understand texture and its type present in igneous rocks.
CO3: Understand melting of rocks and magma generation, cooling process, Bowen's reaction series ,eutectic, solid solution and incongruent relationship.
CO4: Understand magmatic differentiation, fractional crystallisation, liquid immiscibility, assimilation. Tyrrell's tabular, CIPW ,IUGS- QAPF norm classification and nomenclature of igneous rocks based on depth of occurrence, silica percentage and colour index.
CO5: Understand petrography, petrogenesis and association of the common igneous rocks.

5B07GEO Sedimentary and Metamorphic Petrology

CO 1: Understand origin and classification of sedimentary rocks.
CO2: Understand sedimentary deposits, texture and structure and descriptive aspects of major sedimentary rocks
CO3: Understands types and factors of metamorphism, concept of depth zones, Barrowian zones, mineral paragenesis, Facies and grade.
CO4: Understand metamorphic textures and structures, effects of metamorphism on different types of rocks, petrography and petrogenetic aspects of common metamorphic rocks.

5B08GEO Stratigraphy and Palaeontology

CO 1: Understand the concept of strata, principles of Stratigraphy concept of facies, successions, type area and type Sections and breaks in stratigraphic successions.

CO2: Understand the concept of geological column and Geological Time Scale, elements of lithostratigraphic, chronostratigraphic and biostratigraphic classifications , dating of strata and concepts of correlation.

CO3: Understand sub divisions and scope of palaeontology, fossilization, types and uses of fossils, type specimen and marine environments.

CO4: Understands Pre-Cambrian fossils, Siwalik fossils, Morphology, classification, stratigraphic distribution and importance of Trilobites, Brachiopoda, Pelecypoda, Gastropoda, Cephalopoda, Echinoidea, Crinoidea, Blastoidea, Anthozoa, Foraminifera, Hemichordata.

CO5: Understand fossil flora from India and paleoecology of plant fossils.

5B09GEO Economic Geology

CO 1: Understand historical development of Economic Geology. Ore minerals and gangue minerals, tenor and grade of ores, Lindgren's and Bateman's classification. mineralizing solutions and controls of ore localization.

CO2: Understand different processes and types of mineral deposits.

CO3: Understand metallogenetic epochs and provinces, stratigraphic significance of Indian mineral deposits. mode of occurrence, distribution and important economic uses of the mineral deposits in India.

CO4: Understand minerals used as abrasives, refractories, fertilizers, ceramics and gemstones, mineral deposits of Kerala, types of exploration of mineral deposits, fuel minerals sustainable development of mineral resources.

6B10GEO Environmental Geology

CO 1: Understand earth systems to the student's scientific literacy

CO2: Understand the tools necessary to interpret change in global environments with special emphasis to earth system.

CO3: Understand effective problem-solving methodologies for sustainability in human-landscape interactions

CO4: Understand environmental planning and management

CO5: Understand the ecosystem services provided by the natural systems.

6B11GEO Disaster Management

CO 1: Understand the different types of hazards, Risk, Vulnerability, concept of disaster management.
CO2: Understand various geohazards, its causes, mitigation measures and preparation of hazard zonation maps
CO3: Understand the three cycles of disaster management, warning systems, response and post disaster responsibility.
CO4: Understand relationship between disasters and development and disaster management in India.
CO5: Understand disaster management plan and how to support the disaster management system in the State

6B12GEO Geoinformatics

CO 1: Understand fundamentals and components of Geoinformatics.
CO2: Understand history and development, components of and data types of GIS, GIS workflow,. Data entry into GIS. Basic digital map generation and introduction to GIS packages.
CO3: Understand basic idea of GPS, GPS satellites, GPS receivers and uses of GPS.
CO4: Understand basic aspects of satellite remote sensing, various data products of Indian Remote sensing missions, Google Earth and Bhuvan Geoportals.
CO5: Understand various sources of data for geoinformatics and its applications in geological studies.

6B13GEO Geology of India

CO1: Understand the physiographic and major geological divisions of India. Geological time scale and its representative in Indian stratigraphy, early Precambrian terrains of India and the concept of cratons and mobile belts
CO2: Understand Archaean succession of India with special reference to stratigraphy, lithology and structure, Dharwar , Aravalli, Delhi, Cuddapah Vindhyan and Kurnool Supergroup
Brief study of Precambrian Geology of Kerala.
CO3: Understand Palaeozoic stratigraphic succession and associated fossils of Spiti region, marine Mesozoic succession in India, Triassic succession of Spiti, Jurassic succession of Spiti and Kutch, Cretaceaous succession of Trichy and Narmada Valley and Bagh Beds.

CO4: Understand Gondwana Supergroup and age probems of Deccan traps.
CO5: Understand Cenozoic succession of India, Cenozoic succession of Assam, Siwalik Supergroup. Cuddalore sandstone, Quilon and Warkalli formations. Karewa Group and Indo-Gangetic Alluvium.