8. COLLEGE CALENDAR 2022—23 (Tentative)

Month	Academic Activities		Co/Extra-Curricular Activities
	Class Work	Examinations	
Jan-22	Vacations		**Winter Vacations (27.12.2021 to 14.02.2022)**
			National Voters Day, R-Day, National Youth Day
Feb-22	2nd Sem B-2021 3rd Sem B-2020 4th Sem B-2019		IQAC Review Meeting: Review of the NAAC Peer Team visit
			General Staff Meeting-I, Meeting of Career Counseling Cell, Admission/Counseling Cell/Magazine Committee/ Newsletter/Tabloid Committee
			International Mother Language Day (Matri-Bhasha Diwas), Alumni Meet, PTM
Mar-22	2nd Sem B-2021 3rd Sem B-2020	4th Sem B-2019	**PMSSS: Establishment of Nodal Centre, Workshop-I**
			IQAC Meeting for finalizing Action Plan for the year 2022-23
			Meeting of Debates & Seminars Committee, Sports Committee
			Nauroz, World Arbor Day, World Wild life Day, International Women's Day, National Science Day, World Water Day
			Plantation Drive, Science Quiz
Apr-22	2nd Sem B-2021 3rd Sem B-2020 5th Sem B-2019		IQAC Review Meeting: Curricular Aspects
			Mehjoor Day, World Health Day, Earth Day, World Heritage Day
			Placement Drive-I, NCC/NSS Enrollment, Selections for Road/Cycle Race, National Level Chemistry Conference, Anti-Polythene Week
			PMSSS Registration/Verification: 10 April to 31-May, **Workshop-II**
May-22	5th Sem B-2019	2nd Sem B-2021 3rd Sem B-2020	IQAC Review Meeting: Teaching-Learning and Evaluation: Student Satisfaction Survey
			Labour Day, Disaster Management Week, World No Tobacco Day
			Talent Hunt Programme, College Picnic, **Intra-Murals:** (Cricket, Volleyball, Kabbadi), Cycle Race, Selection of Student Editors for College Publications
Jun-22	3rd Sem B-2021 4th Sem B-2020 5th Sem B-2019		IQAC Review Meeting: Research, Innovations and Extension
			General Staff Meeting -II: Syllabus Coverage
			World Environment Day, International Day of Innocent Children Victims of Aggression, World Day against Child Labor, Blood Donor Day
			Cricket Match between Staff & Students, Seminar on: Child Labour, Awareness Programme regarding Administrative Services, Painting Competition, Blood Donation Camp
Jul-22	3rd Sem B-2021 4th Sem B-2020	5th Sem B-2019	Summer Vacations (01.07.2022 to 10.07.2022)
			IQAC Review Meeting: Infrastructure and Learning Resources
			World Population Day, World Hepatitis Day
Aug-22	1st Sem B-2022 3rd Sem B-2021 4th Sem B-2020		IQAC Review Meeting: Student Support and Progression
			General Staff Meeting-III
			International Youth Day, Senior Citizens' Day, Independence Day, Sports Day
			Debate, Selection Trials for Inter-College Tournaments, Sports Quiz, Trekking, Intra-College Badminton Tournament, NSS Camp
Sep-22	1st Sem B-2022 6th Sem B-2019	3rd Sem B-2021 4th Sem B-2020	IQAC Review Meeting: Governance, Leadership and Management
			NSS Day, Teachers Day, Suicide Prevention Day, International Day of Peace, International day for Preservation of Ozone Layer, Road Safety Week
			Role of Teacher in building the Society, Two Week Campaign 'Swach Bharat', Inter-Departmental Tournaments
Oct-22	1st Sem B-2022 6th Sem B-2019		IQAC Review Meeting: Institutional Values and Best Practices
			General Staff Meeting-IV: Syllabus Coverage
			World Mental Health Week, Disaster Reduction Day, International Day of Non-Violence, Girl Child Day, World Day of Eradication of Poverty
			Debate on "Gandhian Philosophy in Contemporary World", National Conference on Poverty Alleviation, "Beti Bachao, Beti Padhao" Campaign
Nov-22	1st Sem B-2022 6th Sem B-2019		IQAC Review Meeting: Institutional Values and Best Practices
			Children's Day, Iqbal Day, National Education Day, Milad-un-Nabi (tent)
			Seerat Conference
Dec-22	4th Sem B-2021 5th Sem B-2020	1st Sem B-2022 6th Sem B-2019	General Staff Meeting-V: Assessment
			Human Rights Day, World Energy Conservation Day, International Day for Disabled, World AIDS Day, National Mathematics Day, National Consumers' Day, Constitution Day
Jan-23	**Vacations**		**Winter Vacations (26.12.2022 to 15.02.2023) Tentative**
Feb-23			
Mar-23 April-23	2nd Sem B-2022 4th Sem B-2021 5th Sem B-2020		**As indicated above!!**
May-23	2nd Sem B-2022	4th Sem B-2021 5th Sem B-2020	
Jun-23	2nd Sem B-2022 5th Sem B-2021 6th Sem B-2020		
Jul-23	5th Sem B-2021 6th Sem B-2020	2nd Sem B-2022	

Department of Geology

Government Degree College Anantnag

Lesson Plan for the Courses Taught in the Department from March 2022 – April 2023

Semester: 1st, NEP-2020

Session: October 2022

Name of the course and code: FUNDAMENTALS OF GEOLOGY (GLY122M)

Teacher Incharge: Dr. Naveen Hakhoo

Unit	No. of Lectures	Topic covered
Unit 1	02	Introduction to the science of geology: Definition, branches, scope and importance.
	01	History of Geology origin and evolution of Geological thoughts.
	02	Modern theories about the origin of the solar system; Origin of the Earth exogenous and endogenous process.
	02	Relation with other branches of sciences; Role of physics, chemistry, and Palaeobiology in the development of ideas about the earth.
	02	Role of Physics in crystallography, gravity, geomagnetism, isostasy, earthquakes and microscopy.
	02	Role of Chemistry in chemical bonds, crystal chemistry, solution chemistry, chemical energetic, introduction to fossils.
Unit 2	02	Fundamental concepts: Catastrophism, uniformitarianism, Davis cycle of erosion, and base level of erosion.
	02	Weathering: definition and types, agents of weathering. Epeirogenesis and orogenesis. Mountains and types.
	01	Volcanoes: types, distribution, and eruptional features.
	02	Glaciers: Definition and types, snowline, glacial movements, and crevasses. Geological work of glaciers: Erosion and deposition.
	01	Aeolian processes: erosional and depositional features.
	01	Geological work of river: erosional and depositional features. Drainage patterns.
	02	Karst topography: Surface and sub-surface features. Structural landforms: Definition and types, Inversion of topography.
	01	Climate and landforms. Soils: Soil formation, Soil profiles.
	03	Oceans: Topography of seafloor. – Continental shelves, slope, abyssal plains, Ocean ridges, submarine valleys, canyons, deep-sea trenches, and guyots. Oceanic erosion and deposition. Coral reefs and types.
Unit 3	03	Introduction to rocks and minerals: Rocks as natural mineral aggregates; types of rocks: igneous rocks; sedimentary rocks; metamorphic rocks.
	02	Preliminary knowledge about the most common rock-forming and economic minerals.
	01	Structure of earth: physical properties.

	02	Focal depth of earthquakes. Earthquake focal mechanisms - how these are obtained. Seismic wave reflection and refraction.
	01	Structure of the Earth: Crust, mantle; Outer core, inner core; wave speed and density distribution.
	02	Earthquake Prediction: Need, definition, possibility, results; Seismic gap theory.
Unit 4	02	Hydrosphere: Distribution of water: Saline water and fresh water. Forms and origin of water.
	01	Surface water (hydrology) and subsurface water (soil water and ground water).
	02	Porosity: Primary and secondary: specific yield and specific retention. Aquifer, Aquitard, Aquiclude, Aquifuge.
	02	Types of aquifers: unconfined, confined and perched aquifers. Hydraulic conductivity and storativity.
	02	Darcy's Law, Understanding the transport and purification of water through Hydrological cycle.
	01	Physico-chemical quality of water (pH, EC, Ca, Mg, Na, K, Cl, HCo3, So4, No3).

Resource and Materials:

(1) Presentations
(2) Literature comprising books and research papers
(3) Web bases resources and e-books/literature
(4) White boards, and interactive e-boards
(5) Maps, charts and models
(6) Samples and laboratory equipment

28/08/2022

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Department of Geology

Government Degree College Anantnag

Lesson Plan for the Courses Taught in the Department from March 2022 – April 2023

Semester: 5th

Session: May 2022

Name of the course and code: STRUCTURAL GEOLOGY (GL520DA)

Teacher Incharge: Dr. Naveen Hakhoo

Unit	No. of Lectures	Topic covered
Unit 1	01	Basic concepts of field geology: Maps–definition, topographic and geological maps.
	01	Dip and strike of stratified rocks, True dip, apparent dip, plunge and pitch of linear structures.
	02	Outcrop patterns. True thickness and vertical thickness. Width of the outcrop, relation between true thickness and the width of outcrop.
	02	Criteria for distinction between normal and overturned sequences: ripple marks, cross bedding, graded bedding, mud cracks, rain-imprints, Pillow lava, and vesicular tops of lava beds.
	01	Relationship of cleavage with bedding, Paleontological methods.
	02	Mechanical principles: Stress; definition of force and stress. Normal and shear stress. Basic concept of stress ellipse.
	01	Strain definition and computation of changes in line length. Basic concept of strain ellipse.
Unit 2	02	Folds: Definition and classification (geometrical); fold parameters/components.
	02	Concordant pluton: sills, laccoliths, lopoliths, and phacoliths. Discordant pluton: dykes, volcanic vents, ring dykes.
	01	Joints- Morphology and classification (Geometrical).
	02	Foliation: Definition and classification; Schistosity, Gneissosity, slaty cleavage.
	01	Lineation: Definition and classification, slickenside, mineral lineation.
	01	Cleavage/ bedding intersections, pucker lineation, boudinage, quartz rodding and mullion.
Unit 3	03	Faults: Definition, terminology and classification (geometrical) Criteria for recognition of faults: discontinuity of structures, repetition and omission of strata.
	03	Features characteristic of fault plane: slickenside, gouge, fault breccias, mylonites, silicification and mineralization, differences in sedimentary facies.
	01	Physiographic criteria: scraps, triangular facets. Offset streams.
	02	Important concepts about Earth dynamics: outline description of Contraction, Expansion, Plate tectonic models.
	02	Plate tectonics - basic concepts and definitions, types of plate margins, important characters of plate margins.
Unit 4	03	Mechanism of plate movement; Mantle plumes vis-à-vis island chains.

		Plate tectonics in relation to the distribution of seismic, volcanic and island arc belts.
	02	Plate tectonic models for the origin of mountain belts: Ocean-ocean, ocean-continent, Continent-Continent types of convergent boundaries.
	02	Tectonics of the Indian subcontinent: Tectonic divisions (Extra-peninsula; Indo- Gangetic Plain and Peninsular Shield), their tectonic characters and major structural trends.
	02	Northward movement of the Indian Plate and the origin and evolution of the Himalayas and its thrust belts.
	02	Tectonic models for the origin and evolution of the Indo-Gangetic plain.
	01	Seismicity of the Indian subcontinent

Resource and Materials:

(1) Presentations
(2) Literature comprising books and research papers
(3) Web bases resources and e-books/literature
(4) White boards, and interactive e-boards
(5) Maps, charts and models
(6) Samples and laboratory equipment

13/05/2022

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Department of Geology

Government Degree College Anantnag

Lesson Plan for the Courses Taught in the Department from March 2022 – April 2023

Semester: 4th

Session: August 2022

Name of the course and code: GEOCHEMISTRY, GEOPHYSICS, HYDROGEOLOGY (GL421C)

Teacher Incharge: Dr. Naveen Hakhoo

Unit	No. of Lectures	Topic covered
Unit 1	03	Introduction to geochemistry: Crystal chemistry-chemical bonds, coordination number, radius ratio, ionization potential, electro-negativity, atomic substitution, phase rule.
	02	Cosmic abundance of elements. Major element, trace elements and Rare earth elements; Large-ion Lithophile elements and High field strength elements.
	02	Gold Schmidt's geochemical classification of elements. Geochemical characteristics of crust, mantle and core.
	02	Geochronology and age of Earth. Relative and absolute dating techniques for age determination.
	01	Radioactivity and concept of half-life, decay constant, natural radioactive isotopes.
Unit 2	02	Introduction and scope of geophysics, Spheroidal shape of earth and Geoid, magnetic field of the earth, palaeo-magnetism, Exploring Earth's interior with geophysical techniques.
	01	Applications of geophysics in mineral and energy resources exploration.
	02	Earth's thermal history: Heat conduction and heat flow. Thermal gradient of the earth. Convection currents-evidence and models.
	02	Gravitational Field: Concept, its variability with latitude, altitude, topography, and subsurface density variations.
	02	Gravity instruments: Pendulum gravimeters, Ship borne measurements.
	02	Units of gravity, gravity anomaly - definition. types (Free- air, Bouger), local and regional concepts. Detection of cavities at engineering sites.
	01	Isostasy: Observation; Pratt and Airy schemes of the isostatic compensation, elastic crust on viscous mantle.
Unit 3	01	Seismology: Earthquake and Seismic waves. effects of seismic waves and damage to structures and natural objects.
	01	Basic features of seismographs; Magnitude and intensity of an earthquake.
	02	Types of earthquakes: tectonic and volcanic. Induced seismicity, Neotectonics.
	03	Elastic rebound theory - statement and geodetic evidence. Earthquake location: Focus, epicenter and hypocenter; Earthquake belts.

	03	Geology as the history of Earth: How the rocks record history, Geological Time Scale, Mineralogy and the texture, Structures.
	03	Introduction to paleoclimate and paleogeography, Surface relief of the earth, Topography of sea floor. Various Geospheres.
Unit 4	02	Mineralogy: Definition, scope, and classification of silicate minerals and ore-forming minerals.
	01	Scalar and vector properties of minerals. Moh's scale of hardness.
	03	Physical properties and mode of occurrence: Quartz, Feldspar, Mica, Amphibole, Pyroxene, Olivine, Garnet, Chlorite, and Carbonate.
	02	Optical Mineralogy: Polarizing microscope, mechanism of polarization and interference of light, use of accessory plates.
	02	Elements of optics, isotopic medium, anisotropic medium, refractive index, Snell's law of critical angle.
	02	Optical indicatrix: isotropic, uniaxial, and biaxial. Pleochroism and Birefringence.
	03	Optical properties of minerals under plane-polarized and cross-polarized light: Forms, cleavage, fractures and parting, refractive index and relief, Becke line and its use.

Resource and Materials:

(1) Presentations
(2) Literature comprising books and research papers
(3) Web bases resources and e-books/literature
(4) White boards, and interactive e-boards
(5) Maps, charts and models
(6) Samples and laboratory equipment

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Dept. of Geology
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Department of Geology

Government Degree College Anantnag

Lesson Plan for the Courses Taught in the Department from March 2022 – April 2023

Semester: 5th

Session: February-March 2023

Name of the course and code: STRUCTURAL GEOLOGY/PLATE TECTONICS (GL521DA)

Teacher Incharge: Dr. Naveen Hakhoo

Unit	No. of Lectures	Topic covered
Unit 1	02	Basic concepts of field geology: Maps–definition, topographic and geological maps.
	02	Dip and strike of stratified rocks, True dip, apparent dip, plunge and pitch of linear structures.
	01	Outcrop patterns. True thickness and vertical thickness.
	01	Width of the outcrop, relation between true thickness and the width of outcrop.
	02	Criteria for distinction between normal and overturned sequences: ripple marks, cross bedding, graded bedding, mud cracks, rain-imprints, Pillow lava, and vesicular tops of lava beds.
	01	Relationship of cleavage with bedding, Paleontological methods.
Unit 2	02	Folds: Definition and classification (geometrical); fold parameters/components.
	02	Unconformities: Definition, types of unconformities. Criteria for recognition of unconformities.
	01	Concordant pluton: sills, laccoliths, lopoliths, and phacoliths. Discordant pluton: dykes, volcanic vents, ring dykes.
	01	Joints- Morphology and classification (Geometrical).
	02	Foliation: Definition and classification; Schistosity, Gneissosity, slaty cleavage.
	02	Lineation: Definition and classification, slickenside, mineral lineation Cleavage/ bedding intersections, pucker lineation, pitch and swell, boudinage, quartz rodding and mullion.
Unit 3	02	Faults: Definition, terminology and classification (geometrical).
	03	Criteria for recognition of faults: discontinuity of structures, repetition and omission of strata, features characteristic of fault plane: slickenside, gouge, fault breccias, mylonites, silicification and mineralization, differences in sedimentary facies.
	02	Physiographic criteria: scraps, triangular facets. Offset streams.
	02	Mechanical principles: Stress; definition of force and stress. Normal and shear stress.
	02	Basic concept of stress ellipse. Strain definition and computation of changes in line length. Basic concept of strain ellipse.

Unit 4	02	Important concepts about Earth dynamics: outline description of Contraction, Expansion, Plate tectonic models.
	02	Plate tectonics - basic concepts and definitions, types of plate margins, important characters of plate margins.
	02	Mechanism of plate movement; Mantle plumes vis-à-vis island chains.
	02	Plate tectonics in relation to the distribution of seismic, volcanic and island arc belts.
	02	Plate tectonic models for the origin of mountain belts: Ocean-ocean, ocean-continent, Continent-Continent types of convergent boundaries.
	03	Northward movement of the Indian Plate and the origin and evolution of the Himalayas and its thrust belts.
	02	Seismicity of the Indian subcontinent.

Resource and Materials:

(1) Presentations
(2) Literature comprising books and research papers
(3) Web bases resources and e-books/literature
(4) White boards, and interactive e-boards
(5) Maps, charts and models
(6) Samples and laboratory equipment

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Deptt. Of Geology
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Department of Geology

Government Degree College Anantnag

Lesson Plan for the Courses Taught in the Department from March 2022 – April 2023

Semester: 6th

Session: October 2022

Name of the course and code: PALAEONTOLOGY AND STRATIGRAPHY (PSRD616)

Teacher Incharge: Dr. Naveen Hakhoo

Unit	No. of Lectures	Topic covered
Unit 1	02	Paleontology: Origin and evolution of the life through ages
	01	Geological time scale
	01	Preliminary idea about faunal succession.
	03	Fossils, their characters, conditions necessary for fossilization; types of preservation and occurrence
	01	Application of Paleontology
	03	Evolution of Man, Horse & Elephant
Unit 2	01	Morphology characters, geological, geographical and stratigraphic distribution of Brachiopoda
	01	Morphology characters, geological, geographical and stratigraphic distribution of Bivalvia
	01	Morphology characters, geological, geographical and stratigraphic distribution of Gastropoda
	01	Morphology characters, geological, geographical and stratigraphic distribution of Cephalopoda
	01	Morphology characters, geological, geographical and stratigraphic distribution of Graptoloidea
	01	Morphology characters, geological, geographical and stratigraphic distribution of Anthozoa
	01	Morphology characters, geological, geographical and stratigraphic distribution of Echinoidea
	01	Morphology characters, geological, geographical and stratigraphic distribution of Trilobita
	02	Introduction to micropaleontology and microfossils and their application
Unit 3	03	Elementary ideas about Foraminifera, Ostracoda, Radiolarian and Conodonts
	02	Elementary concept of vertebrate Paleontology with special reference to Siwaliks
	02	Introduction to Palaeobotany with special reference to Gondwana plant fossils.
	02	Extinction of organisms with special reference different hypothesis for the extinction of dinosaurs Introduction to Palynology and its applications.

	01	Application of paleontological data in palaeogeographic reconstructions.
	01	Paleontological evidence in favor of continental drift.
Unit 4	01	Stratigraphy: introduction, nomenclature and Principles.
	01	Stratigraphic correlation; imperfection of geological record.
	05	Brief introduction to Precambrian rocks of India with special reference to their classification, distribution, lithology and economic importance: Dharwar, Aravalli, Cuddapah, Vindhyan and J&K
	02	Stratigraphy of the following Phanerozoic rocks with special reference to their lithology and fossil content: Paleozoic succession of Kashmir.
	03	Triassic of Spiti, Jurassic of Kutch, Cretaceous of Tiruchirapalli. Stratigraphy of Siwaliks and Karewas of Kashmir.

Resource and Materials:

(1) Presentations
(2) Literature comprising books and research papers
(3) Web bases resources and e-books/literature
(4) White boards, and interactive e-boards
(5) Maps, charts and models
(6) Samples and laboratory equipment

13/10/2022

Head of the Department

Deptt. Of Geology
G.D.C Boys Anantnag

Department of Water Management

Government Degree College Anantnag

Lesson Plan for the Courses Taught in the Department from March 2022 – April 2023

Semester: 1st

Session: 2022 (September)

Name of the course and code: Introduction to Water (WMG122M)

Teacher Incharge: Dr. Sartaj Ahmad Ganie

Unit	No. of Lectures	Topic covered
Unit 1	2	Origin of water on earth
	1	properties of water (Polarity, Cohesion,
	1	Density, Surface Tension
	1	Viscosity, Heat capacity,
	1	Boiling and freezing points
	2	Temperature, Taste, Odour, Colour
	2	Importance of water.
Unit 2	1	Water as a resource,
	1	Concept of valuing water,
	2	Types of water resources, Inland water distribution and importance,
	1	Ground water distribution and importance,
	1	Cryosphere: Distribution and importance,
	1	Marine waters: Distribution and importance,
	3	Water resources of J&K (River systems and glaciers).
Unit 3	1	Importance of water in human civilization
	2	(Mesopotamian and Indus),
	1	Water catastrophes: Historical perspective and consequences,
	3	Water infrastructure and tools (Ancient, Medieval and modern).
Unit 4	1	Distribution of water,
	3	Availability and consumption patterns in domestic, industrial, and agricultural sectors,
	2	Concept of water stress and scarcity,
	1	Water footprint,
	1	Domestic water demand and consumption in urban and rural India,
	1	Sustainable Development Goal 6 (SDG)

Resource and Materials:

(1) Presentations
(2) Literature comprising books and research papers
(3) Web bases resources and e-books/literature

(1) Presentations
(2) Literature comprising books and research papers
(3) Web bases resources and e-books/literature
(4) White boards, and interactive e-boards
(5) Maps, charts and models
(6) Samples and laboratory equipment

16-12-2023

Head of the Department

Department of Water Management

Government Degree College Anantnag

Lesson Plan for the Courses Taught in the Department from March 2022 – April 2023

Semester: 2nd

Session: 2023 (Feb.)

Name of the course and code: (HYDROLOGY AND WATER QUALITY) (WMG222M)

Teacher Incharge: Dr. Sartaj Ahmad Ganie

Unit	No. of Lectures	Topic covered
Unit 1	1	Concept and scope of hydrology,
	3	Hydrological cycle: Evaporation: Process, Factors effecting evaporation, Measurement of evaporation,
	1	Transpiration: process, Factors affecting transpiration
	1	Condensation: Process and measurement,
	2	Precipitation: Process, Types and forms, Measurement and distribution.
Unit 2	1	Runoff cycle and its components,
	1	Factors effecting runoff, Measurement of Runoff,
	1	Stream gauging,
	1	Stream hydrology,
	1	Hydrograph concept and its applications,
	1	Ground water movement (Darcy's Law),
	1	Permeability and hydraulic conductivity,
		Aquifers: Types and geology.
Unit 3	2	Physical water quality parameters: Temperature, Colour, Taste,
	1	Odour Turbidity: Total Solids (TS), Total dissolved Solids (TDS),
	2	Total Suspended Solids (TSS), Volatile suspended solids (VSS),
	2	Volatile Dissolved Solids (VDS), Total Volatile Solids (TVS),
	2	pH, Conductivity,
	1	Concept of water quality index.
Unit 4	2	Major cations (Ca, Mg, Na, K),
	2	Major Anions (bicarbonates, sulphates, chlorides),
	2	Dissolved Gases in water (DO, CO2),
	2	Biochemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD),
	2	Microbial water quality-coliform bacteria, Indicator organisms.

Resource and Materials:

(4) White boards, and interactive e-boards
(5) Maps, charts and models
(6) Samples and laboratory equipment

16-12-2023

Head of the Department