Minor Courses in Geology–Group 2
SLOT –A

ogramme	B.Sc.Geology				
CourseCode	GEL1MN102				
Course Title	**PHYSICALGEOLOGY**				
TypeofCourse	**Minor**				
Semester	I				
Academic Level	100 -199				
Course Details	Credit	Lecture perweek	Tutorial perweek	Practical perweek	Total Hours
	4	3	-	2	75
Pre-requisites	NIL				
Course Summary	This course serves as an introduction to the field of geology, coveringfundamentalconceptsrelatedtoEarth'sformation,dimensions,dynamic evolution,geochronology,andmajorgeological hazards.				

CourseOutcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Toolsused
CO1	Studentswillhaveanunderstandingof the basic principles and concepts of geology,includingtheformationof Earth and its dimensions.	U	F	Exam
CO2	Students will be able to explain the theoriesofEarth's formationandits physical dimensions, including the structureandcompositionofEarth's interior layers.	Ap	C	Home assignments
CO3	Students will analyze the dynamic processes that have shaped Earth's surface and interior over geological timescales,includingplatetectonics, mountain building, erosion, and sedimentation.	An	P	Seminar presentations
CO4	Students will be able to interpret geochronologicaldataandunderstand the methods used to determine the agesofrocks	E	M	Home assignments
CO5	Students will identify and describe major geological hazards, including earthquakes,volcaniceruptions,and understandthegeologicalprocesses that cause them.	Ap	F	Assignment
CO6	Studentswill evaluatestrategiesfor mitigatingtheimpactsofgeological hazardsonsocietyandthe environment.	E	M	Practical Assignment

*-Remember(R),Understand(U),Apply(Ap),Analyse(An),Evaluate(E),Create(C)
#-FactualKnowledge(F)ConceptualKnowledge(C)ProceduralKnowledge(P)Metacognitive Knowledge (M)

DetailedSyllabus:PHYSICALGEOLOGY

Module	Unit	Content	Hrs	Marks
I		**IntroductiontoGeology**	**10**	
	1	Geology:TheScienceof Earth	2	
	2	TheDevelopmentof Geology	3	**15**
	3	TheNatureofScientificInquiry	2	
	4	PlateTectonicsandScientificInquiry	3	
II		**Earth'sFormationandDimensions**	**15**	
	5	Earth’sSpheres	3	
	6	EarthSystem	3	
	7	Evolution of Earth	2	**20**
	8	FormationofEarth’slayeredstructure	2	
	9	Earth’sInternalStructure	2	
	10	LayersdefinedbyPhysical Properties	3	
III		**Changing Earth &Geochronology**	**10**	
	11	TheRock Cycle	2	
	12	ThefaceofEarth. Mountainbuilding. Origin& evolutionof ocean floor	2	
	13	Ageof the earth	2	**15**
	14	Datingmethods:Absolute(radiometric)andrelative(stratigraphy)	2	
	15	Applicationofdatingmethods inconstructingtheGeological Time Scale	1	
	16	Overviewoferas,periods,epochs–major geologicalevents.	1	
IV		**IntroductiontoMajorGeological Hazards**	**10**	
	17	Volcanoes &VolcanicHazards	1	
	18	NatureofVolcanicEruptions and Products	1	
	19	TypesofVolcanoes &Volcanic Landforms	2	**20**
	20	Earthquakes&Earthquake Hazards	2	
	21	Seismology,SeismicWaves,Earthquakes&Plate Boundaries	2	
	22	EarthquakeDestruction. Prediction,ForecastandMitigation	2	
V		**Practical**	**30**	
	1	Lab exercises to apply the concepts of interior of earth, earth’s magnetismandplatetectonics.Exploringgeologicfeaturesusing GoogleEarth.	20	**20**
	2	IntroductiontoTopographicMaps.Exercisesinvolvingcontourlines.	4	
	3	ApplicationofGt. Aide(Academy) Freeware	6	

MappingofCOswithPSOsandPOs:

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	1	-	-	-	-	-							
CO2	2	3	-	-	-	-							
CO3	-	-	1	-	-	-							
CO4	-	-	2	3	-	-							
CO5	-	1	-	-	-	-							
CO6	-	-	-	3	-	-							

Level	Correlation
-	Nil
1	Slightly/Low
2	Moderate/Medium
3	Substantial/High

AssessmentRubrics:
Externalevaluation: 70marks.InternalEvaluation: 30marks

INTERNAL MARKSPLIT-UP(TOTAL 30 MARKS)			
	ComponentsofInternalEvaluation	4 TheoryModules (10)	**Practical (20)**
1	Testpaper/**ContinuousEvaluation of PracticalExercises**	5	**10**
2	Seminar/**EndSemExam&Viva-Voce**	3	7
3	Assignment/**Lab Record**	2	**3**

MappingofCOstoAssessment Rubrics:

	InternalExam	Assignment	Seminar	EndSemesterExaminations
CO1	✓			✓
CO2	✓			✓
CO3	✓			✓
CO4		✓		✓
CO5		✓		✓
CO6			✓	

References:

1. Condie, K.C., 2015. *Earth as an Evolving Planetary System*, 3rd Edition, AcademicPress,USA.
2. Hudson, T., 2012. *Livingwith Earth – AnIntroduction to Environmental Geology*. PearsonEducation Inc.,New Jersey, USA
3. Marshak,S.,2001.*Earth:PortraitofaPlanet.*W.W.Norton&Co.,Inc.,USA
4. Wicander, R. and Monroe, J., 2006. *Essentials of Geology.* 4th Edition, Thomson LearningInc., USA.

Tarbuck,E.J.andLutgens,F.K.,2008.Earth:AnIntroductiontoPhysicalGeology.9th Edition, Pearson Education, Inc., New Jersey, USA