

GOVT.DIGVIJAY AUTONOMOUS PG COLLEGE
RAJNANDGAON (CG)

DEPARTMENT OF GEOLOGY
SYLLABUS FOR

THE FOUR-YEAR UNDERGRADUATE PROGRAM

B.Sc. I,II,III,IV,V,VI SEMESTER

DSC Syllabus

DSE Syllabus

SEC Syllabus

Session 2025-26

Member of Board of Study – Geology

Chairperson/ HOD : Narendra Kumar Sakre



Dr. S. Janamani



Subject Expert: Dr. S. D. Deshmukh

Subject Expert: Dr. Prashant Shrivastav



Subject Expert: Dr. Rajeev Guhe

GOVT.DIGVIJAY AUTONOMOUS PG COLLEGE RAJNANDGAON (C.G.)

Department of Geology

B.Sc. Geology Semester - I, II, III, IV, V, VI

Session 2025-26

Syllabus & Scheme of Semester System Session 2025-26

Sem.	Course	Course Code	Name	Credits	Marks
I	DSC- 1 T		Fundamental of Geology	03	
	DSC- 1 P		Fundamental of Geology	01	
	GE - 1 T		Fundamental of Geology	03	
	GE - 1 P		Fundamental of Geology	01	
	VAC		Disaster Management	02	
II	DSC- 2 T		Essentials of Geology	03	
	DSC- 2 P		Essentials of Geology	01	
	GE - 1 T		Essentials of Geology	03	
	GE - 1 P		Essentials of Geology	01	
	SEC		Rain Water Harvesting	02	
III	DSC- 3 T		Igneous & Metamorphic Petrology	03	
	DSC- 3 P		Igneous & Metamorphic Petrology	01	
	DSE - 3 T		Earth & Climate	03	
	DSE - 3 P		Natural resources and management	01	
	VAC -		Disaster Management	02	
IV	DSC- 4 T		Sedimentary Petrology & Crustal Evolution	03	
	DSC- 4 P		Sedimentary Petrology & Crustal Evolution	01	
	DSE - 4 T		Environmental Geology	03	
	DSE - 4 P		Microbiology and Phytotoxology	01	
	SEC		Rain Water Harvesting	02	
V	DSC-5 T		Stratigraphy	03	
	DSC- 5 P		Stratigraphy	01	
	DSE - 5 T		Palaeontology	03	
	DSE - 5 P		Palaeontology	01	
			Applied Geology	03	
VI	DSC- 6T		Applied Geology	01	
	DSC- 6P		Geological Mapping Techniques	03	
	DSE- 6T		Plant breeding and Seed technology)	01	
	DSE- 6P				

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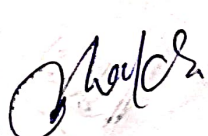

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FOUR YEAR UNDERGRADUATE PROGRAM (2025-26)

DEPARTMENT OF GEOLOGY

COURSE CURRICULUM

PART-A: Introduction			
Program: Bachelor in Science (Certificate/Diploma/Degree/Honors)		Semester: I	Session: 2025-26
1	Course Code	GESC-01T	
2	Course Title	Fundamentals of Geology	
3	Course Type	Discipline Specific Course	
4	Pre-requisite (if any)	As per program	
5	Course Learning Outcomes (CLO)	After successfully completing this course, the students will be able to: <ul style="list-style-type: none"> • Understand basics of Geology, Solar system and internal structure of the Earth, origin and age of the Earth • Understand the theories of continental drift and plate tectonics • Understand causes and effects of earthquakes and explain weathering and its products • Describe concepts of geomorphology and landforms developed by various geological agencies • Explain about the physiographic and tectonic divisions of India 	
6	Credit Value	3 Credits (Credit=15 hours-learning & observation)	
7	Total Marks	Max. Marks: 100	Min Passing Marks : 40
PART- B: CONTENT OF THE COURSE			
Total No. of Teaching-learning Periods (01 hour per period)- 45 Periods (45 Hours)			
Unit	Topics (Course Contents)		No. of Period
I	General Geology & Geodynamics: Introduction to Geology; Geology and its relation with other branches of science; Earth and solar system; Theories regarding origin and age of the Earth Shape and structure of the Earth; Introduction to Continental Drift, Sea-floor spreading & Plate Tectonics. Introduction to Geomorphology: Definition of Geomorphology; Erosional & Depositional features of various Geomorphological Agents (River, Wind and Glacial).		11
II	Structural Geology: Its definition; Attitude of Beds (Dip and Strike). Introduction to Fold, Fault and Joints. Economic Geology: Its definition, Introduction to important Indian mineral deposits (metallic and non-metallic). Introduction to important ore forming processes (magmatic, hydrothermal, supergene, supplied enrichment, mechanical concentration)		11
III	Stratigraphy: Its definition, Principles of Stratigraphy, Types of Correlation, Geological Time Scale. Paleontology: Its definition, Fossil, Mode of Preservation, Uses of Fossil, Index Fossil		12
IV	Applied Geology: Definition and Scope of Hydrogeology. Definition and Scope of Engineering Geology. Definition and Scope of Mining Geology. Definition and Scope of Environmental Geology, Definition and Scope of Mineral Exploration		11

Part - C: Learning Resource**Text Books, Reference Books, Others****Text Books Recommended-**

1. भैतिक भूविज्ञान डॉ मुकुल घोष
2. भैतिक भूविज्ञान डॉ जे पी तिवारी
3. भैतिक भूविज्ञान डॉ सविन्द्र सिंह
4. भैतिक भूविज्ञान डॉ दीपरात तिवारी

Reference Books

1. Holmes, A. Doris L Holmes Edit., Principles of Physical Geology, Van Nostrand Reinhold, 1978.
2. Mahapatra, G.B., Text book of Physical Geology, CBS, India, 2018
3. Mathur, S.M., Physical Geology of India, NBT India, 1991 9. Miller, William J., Physical Geology: An Introduction. D Van Nostrand Co., 5th Ed., 1949
4. Mukerjee, P.K., Text Book of Geology. World Press Private Ltd, 2013.
5. Thornbury, W.D., Principles of Geomorphology. New Age International, 2nd Edition, 196 12. Principles of Geomorphology: A.F. Ahmad

E-resources

1. <http://12s://012entextbc.ca/12hysicalgeology2ed/front-matte/rdownload-a-12dfl>
2. <http://12s://archive.org/details/in.emet.dli.2015.233340/12age/n15/mode/2uQ>
3. <http://12s://egvankosh.ac.in/>
4. <http://12s://sites.google.com/ignou.ac.in/bsscgeology>
5. SWAYAM-<https://swayam.gov.in/explorer?search=text>
6. National digital library <http://12s://ndl.iitken.ac.in>
7. e-PG paths Hala (MHRD) portal, <http://12s://eg12g.intlibnet.ac.in>

PART- D: Assessment and Evaluation -Theory**Suggested Continuous Evaluation Methods:**

Maximum Marks:	100 Marks
Continuous Internal Assessment(CIA):	30 Marks
End Semester Exam (ESE):	70 Marks

Continuous Internal Assessment (CIA): (By Course Teacher)	Internal Test/ Quiz-(2): 20 +20 Assignment / Seminar - IO Total Marks - 30	Better marks out of the two Test/ Quiz + obtained marks in Assignment shall be considered against 30 Marks
End Semester Exam (ESE):	Two section - A & B Section A: Q1. Objective -10 x1= 10 Mark; Q2. Short answer type- 5x4 =20Marks Section B: Descriptive answer type qts., lout of 2 from each unit-4x10=40 Marks	

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FOUR YEAR UNDERGRADUATE PROGRAM (2025-26)

DEPARTMENT OF GEOLOGY

COURSE CURRICULUM

PART-A: Introduction			
Program: Bachelor in Science (Certificate/Diploma/Degree/Honors)		Semester: I	Session:2025-2026
1	Course Code	GESG-01P	
2	Course Title	Lab. Course .01 (Fundamentals of Geology)	
3	Course Type	Discipline Specific Course	
4	Pre-requisite (if any)	As per program	
5	Course Learning Outcomes (CLO)	After successfully completing this course, the students will be able to: <ul style="list-style-type: none"> Identify and describe various landforms in geomorphologic models. Interpret topographical maps 	
6	Credit Value	I Credit	(Credit=30 hours Laboratory or Field learning/ Training)
7	Total Marks	Max. Marks: 50	Min Passing Marks: 20
Part B: Content of the Course			
Total No. of learning-Training/performance Periods: 30 Periods (30 Hours)			
Module	Topics (Course contents)		No. of Period
Lab./Field Training/ Experiment Contents of Course,	1. Physical properties of minerals. 2. Introduction to Clinometer Compass and its use. 3. Study of Geomorphological Models.		30

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Part - C: Learning Resource**Text Books, Reference Books, Others****Text Books Recommended-**

1. भैतिक भूविज्ञान डॉ मुकुल घोष
2. भैतिक भूविज्ञान डॉ जे पी तिवारी
3. भैतिक भूविज्ञान डॉ सविन्द्र सिंह
4. भैतिक भूविज्ञान डॉ दीपरात तिवारी

Reference Books

1. Holmes, A. Doris L Holmes Edit., Principles of Physical Geology, Van Nostrand Reinhold, 1978.
2. Mahapatra, G.B., Text book of Physical Geology, CBS, India, 2018
3. Mathur, S.M., Physical Geology of India, NBT India, 1991 9. Miller, William J., Physical Geology: An Introduction, D Van Nostrand Co., 5th Ed., 1949
4. Mukerjee, P.K., Text Book of Geology. World Press Private Ltd, 2013.
5. Thornbury, W.D., Principles of Geomorphology. New Age International, 2nd Edition, 196 12. Principles of Geomorphology: A.F. Ahmad

E-resources

1. <https://onentextlbc.ca/nphysicalgeology2ed/front-matterdownload-a-Qdfl>
2. <https://archive.org/details/in.ernet.dli.2015.233340/nage'n15/mode'2uQ>
3. <https://egvankosh.ac.in/>
4. <http://12s://sites.google.com/ignou.ac.in/bscgeology>
5. SWAYAM-<https://swayam.gov.in/explorer?searchtext>
6. National digital library <http://12s://ndl.iitk.ac.in>
7. e-PG paths Hala (MHRD) portal, [http://12s://eg\[1g.intlibnet.ac.in](http://12s://eg[1g.intlibnet.ac.in)

PART- D: Assessment and Evaluation**Suggested Continuous Evaluation Methods:**

Maximum Marks: 50 Marks

Continuous Internal Assessment(CIA):15 Marks End

Semester Exam (ESE): 35 Marks

Continuous Internal Assessment (CIA): (By Course Teacher)	Internal Test/ Quiz-(2): 10 & 10 Assignment/Seminar+Attendance - 05 Total Marks -15	Better marks out of the two Test/ Quiz +obtained marks in Assignment shall be considered against 15 Marks
End Semester Exam (ESE):	Laboratory / Field Skill Performance: On spot Assessment A. Performed the Task based on lab. work - 20 Marks B. Spotting based on tools & technology (written)-10 Marks C. Viva-voce (based on principle/technology) - 05 Marks	Managed by Course teacher as per lab. status

Name and Signature of Convener & Members of CBoS:

FOUR YEAR UNDERGRADUATE PROGRAM (2025-26)

DEPARTMENT OF GEOLOGY

COURSE CURRICULUM

PART-A: Introduction			
Program: Bachelor in Science (Certificate/Diploma/Degree/Honors)		Semester: I	Session:2025-2026
1	Course Code	GEGE-01T	
2	Course Title	Fundamentals of Geology	
3	Course Type	Generic Course	
4	Pre-requisite (if any)	As per program	
5	Course Learning Outcomes (CLO)	After successfully completing this course, the students will be able to: <ul style="list-style-type: none"> • Understand basics of Geology, Solar system and internal structure of the Earth, origin and age of the Earth • Understand the theories of continental drift and plate tectonics • Understand causes and effects of earthquakes and explain weathering and its products • Describe concepts of geomorphology and landforms developed by various geological agencies • Explain about the physiographic and tectonic divisions of India 	
6	Credit Value	3 Credits (Credit=15 hours-learning & observation)	
7	Total Marks	Max. Marks: 100	Min Passing Marks : 40
PART- B: CONTENT OF THE COURSE			
Total No. of Teaching-learning Periods (01 hour per period)- 45 Periods (45 Hours)			
Unit	Topics (Course Contents)		No. of Period
I	General Geology & Geodynamics: Introduction to Geology; Geology and its relation with other branches of science; Earth and solar system; Theories regarding origin and age of the Earth Shape and structure of the Earth; Introduction to Continental Drift, Sea-floor spreading & Plate Tectonics. Introduction to Geomorphology: Definition of Geomorphology; Erosional & Depositional features of various Geomorphological Agents (River, Wind and Glacial).		15
II	Structural Geology: Its definition; Attitude of Beds (Dip and Strike). Introduction to Fold, Fault and Joints. Economic Geology: Its definition, Introduction to important Indian mineral deposits (metallic and non-metallic). Introduction to important ore forming processes (magmatic, hydrothermal, supergene sulphide enrichment, mechanical concentration)		15
III	Stratigraphy: Its definition, Principles of Stratigraphy, Types of Correlation, Geological Time Scale. Palaeontology: Its definition, Fossil, Mode of Preservation, Uses of Fossil, Index Fossil		15
IV	Applied Geology: Definition and Scope of Hydrogeology. Definition and Scope of Engineering Geology. Definition and Scope of Mining Geology. Definition and Scope of Environmental Geology, Definition and Scope of Mineral Exploration		15

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Part - C: Learning Resource**Text Books, Reference Books, Others****Text Books Recommended-**

- 1.
- 2.
- 3.

Reference Books

4. Holmes, A. Doris L Holmes Edit., Principles of Physical Geology, Van Nostrand Reinhold, 1978.
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 6. Mathur, S.M., Physical Geology of India, NBT India, 1991 9. Miller, William J., Physical Geology: An Introduction. D Van Nostrand Co., 5th Ed., 1949
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- Principles of Geomorphology: A.F. Ahmad

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3. <http://eevankosh.ac.in/>
4. <https://sites.google.com/ignou.ac.in/bsscgeology>
5. SWAYAM-<https://swayam.gov.in/explorer?searchtext>
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PART-D: Assessment and Evaluation -Theory**Suggested Continuous Evaluation Methods:**

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End Semester Exam (ESE):	70 Marks

Continuous Internal Assessment (CIA): (By Course Teacher)	Internal Test/ Quiz-(2): 20 +20 Assignment/ Seminar - 10 Total Marks - 30	Better marks out of the two Test/ Quiz + obtained marks in Assignment shall be considered against 30 Marks
End Semester Exam (ESE):	Two section - A & B Section A: Q1. Objective -10 xl= 10 Mark; Q2. Short answer type- 5x4 =20Marks Section B: Descriptive answer type qts., lout of 2 from each unit-4x10=40 Marks	

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YEAR UNDERGRADUATE PROGRAM (2025-26)
DEPARTMENT OF GEOLO

PART A: Introduction			
Program: Bachelor in Science (Certificate/Diploma/Degree/Honors)		Semester: 1	
		Session: 2025-2026	
1	Course Code	GEGE-01P	
2	Course Title	Lab. Course -01 (Fundamentals of Geology)	
3	Course Type	Discipline Elective Course	
4	Pre-requisite (if any)	As per program	
5	Course Learning Outcomes (CLO)	After successfully completing this course, the students will be able to: <ul style="list-style-type: none"> Identify and describe various landforms in geomorphologic models. Interpret topographical maps 	
6	Credit Value	1 Credit	(Credit=30 hours Laboratory or Field learning/ Training)
7	Total Marks	Max. Marks: 50	Min Passing Marks: 20
Part B: Content of the Course			
Total No. of learning-Training/performance Periods: 30 Periods (30 Hours)			
Module	Topics (Course contents)		No. of Period
Lab./Field Training/ Experiment Contents of Course,	1. Physical properties of minerals. 2. Introduction to Clinometer Compass and its use. 3. Study of Geomorphological Models.		30

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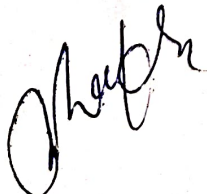


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Part - C: Learning Resource	
Text Books, Reference Books, Others	
Text Books Recommended-	
1. 2. 3. 4.	
Reference Books	
5. Holmes, A. Doris L Holmes Edit., Principles of Physical Geology, Van Nostrand Reinhold, 1978. 6. Mahapatra, G.B., Text book of Physical Geology, CBS, India, 2018 7. Mathur, S.M., Physical Geology of India, NBT India, 1991 9. Miller, William J., Physical Geology: An Introduction. D Van Nostrand Co., 5th Ed., 1949 8. Mukerjee, P.K., Text Book of Geology. World Press Private Ltd, 2013. 9. Thornbury, W.D., Principles of Geomorphology. New Age International, 2nd Edition, 196 12. Principles of Geomorphology: A.F. Ahmad	
E-resources	
1. http12s://012entxtbc.ca/12hxsicalgeoloey2ed/front-matte/rdownload-a-12dfl 2. http12s://archive.org/details/in.emet.dli.2015.233340/Qage/n15/mode/2uQ 3. https://egvankosh.ac.in/ 4. https://sites.google.com/ignou.ac.in/bsegeology 5. SWAYAM- https://swayam.gov.in/explorer?searchtext 6. National digital library https://ndl.iitkgp.ac.in 7. e-PG pathshala (MHRD) portal, http12s://eeng.inflibnet.ac.in	

PART- D: Assessment and Evaluation			
Suggested Continuous Evaluation Methods:			
Maximum Marks: 50 Marks			
Continuous Internal Assessment(CIA):15 Marks End			
Semester Exam (ESE): 35 Marks			
Continuous Internal Assessment (CIA): (By Course Teacher)	Internal Test/ Quiz-(2): 10 & 10 Assignment/Seminar +Attendance - 05 Total Marks -15		Better marks out of the two Test / Quiz +obtained marks in Assignment shall be considered against 15 Marks
End Semester Exam (ESE):	Laboratory/ Field Skill Performance: On spot Assessment A. Performed the Task based on Lab. work -20 Marks B. Spotting based on tools & technology (written)- 10 Marks C. Viva-voce (based on principle/technology) - 05 Marks		Managed by Course teacher as per lab. status

Name and Signature of Convener & Members of

FOUR YEAR UNDERGRADUATE PROGRAM (2025-26)
DEPARTMENT OF GEOLOGY
COURSE CURRICULUM

PART-A: Introduction		
Program: Bachelor in Science (Certificate/Diploma/Degree/Honors)		Semester: 1/111/N Session: 2024-2026
1	Course Code	GEVAC-01
2	Course Title	DISASTER MANAGEMENT
3	Course Type	Value Addition Course
4	Pre-requisite(if any)	As per Government norms
5	Course Learning Outcomes (CLO)	<p>On completion of Course, the students should be able to-</p> <ol style="list-style-type: none"> 1.) Appropriate actions at all points in the cycle lead to greater preparedness, better warnings, reduced vulnerability or the prevention of disasters during the next iteration of the cycle. 2.) The complete disaster management cycle includes the shaping of public policies and plans that either modify the causes of disasters or mitigate their effects on people, property, and infrastructure. 3.) Capacity to obtain, analyze, and communicate information on risks, relief needs and lessons learned from earlier disasters in order to formulate strategies for mitigation in future scenarios with the ability to clearly present and discuss their conclusions and the knowledge and arguments behind them
6	Credit Value	2 Credits (Credit=30 hours-learning & observation)
7	Total Marks	Max.Marks:50 Min Passing Marks : 20
PART- B: CONTENT OF THE COURSE		
Total No. of Teaching-learning Periods (01 hour per period)- 30 Periods (30 Hours)		
Unit	Topics (Course Contents)	No. of Period
I	1) Meaning & Definition of Natural Disaster 2) Earthquake 3) Active fault 4) Volcanoes 5) Landslide - Types, avalanches	15
II	1) Heatwave, Wild fires 2) Cloud Burst , Hailstorm 3) Drought and Famine 4) Tsunami, Hurricane, Cyclone 5) Flood , Glacial Outburst Flood, Flash flood	15

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Part-C

Learning Resource: Text Books, Reference Books, Others

Text Books Recommended-

1. Natural Hazards and Disaster Management: Vulnerability and Mitigation RB Singh Rawat Publications 2006

2. Natural Disaster Management Soumitra Roy 2006 Abhijeet Publications

3. Disaster Management Challenges and strategies of India, Dr. M. C. Shubin Tad Notion Press 2021

Online Recourses

<https://guides.loc.gov/natural-disasters/internet-resources>

PART-D: Assessment and Evaluation -Theory

Suggested Continuous Evaluation Methods:

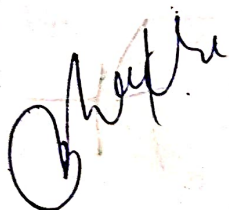
Maximum Marks: 50 Marks

Continuous Internal Assessment(CIA): 15 Marks

End Semester Exam (ESE): 35 Marks

Continuous Internal Assessment (CIA): (By Course Teacher)	Internal Test/ Quiz-(2): 5+5 Assignment / Seminar - 5 Total Marks - 30	Better marks out of the two Test/ Quiz + obtained marks in Assignment shall be considered against 15 Marks
End Semester Exam (ESE):	Two section - A & B Section A: Q1. Objective - 10 x1 = 10 Mark; Q2. Short answer type- 5x2=10Marks Section B: Descriptive answer type qts., Sout of 3 from each unit-3x5=15 Marks	

Name and Signature of Convener & Members ofCBoS:



FOUR YEAR UNDERGRADUATE PROGRAM (2025-26)

DEPARTMENT OF GEOLOGY

COURSE CURRICULUM

PART-A: Introduction		
Program: Bachelor in Science (Diploma/Degree/Honors)		Semester: III
		Session: 2025-2026
1	Course Code	GESC-03T
2	Course Title	IGNEOUS AND METAMORPHIC PETROLOGY
3	Course Type	Discipline Specific Course
4	Pre-requisite (if any))	As per program
5	Course Learning Outcomes (CLO)	<p>On completion of Course, the students should be able to</p> <ul style="list-style-type: none"> • Discuss about the formation of igneous rocks, their texture and structures • Explain about forms and classification of igneous rocks • Explain about the formation of metamorphic rocks, their texture and structure • Identify and classify various types of metamorphic rocks. • Explain the concept of metamorphic facies, ACF, AKF and AFM diagrams.
6	Credit Value	3 Credits (Credit=15 hours-learning & observation)
7	Total Marks	Max. Marks: 100 Min Passing Marks : 40
PART- B: CONTENT OF THE COURSE		
Total No. of Teaching-learning Periods (01 hour per period)- 45 Periods (45 Hours)		
Unit	Topics (Course Contents)	No. of Period
I	<p>Igneous petrology:</p> <p>Magma- Defamation, Origin, Composition Bowen's Reaction series</p> <p>Magmatic Differentiation & Assimilation</p> <p>Bicomponent Magma- i) Albite - Anorthite System</p> <p>ii) Diopside- Anorthite System</p> <p>5) Tricomponent- Diopside- Anorthite -Albite system</p>	12
II	<p>Igneous Petrology:</p> <p>Texture, Structure, Forms of igneous rock</p> <p>Classification of Igneous rock</p> <p>Petrography of Acidic Igneous rock</p> <p>Petrography of Intermediate Igneous rock</p> <p>Petrography of Basic and Ultra basic Igneous Rock</p>	12
III	<p>Metamorphic Petrology: Metamorphosis</p> <p>- Definition & Agents Metamorphosis -</p> <p>Facies and Grades</p> <p>Texture and structure of metamorphic rocks</p> <p>Classification of metamorphic rocks</p> <p>Paragenetic Diagram, ACF and AKF</p>	11
IV	<p>Metamorphic Petrology:</p> <p>Thermal Metamorphism of Argillaceous rock</p> <p>Thermal Metamorphism of Impure Lime stone</p> <p>Metamorphism of Basic Igneous rock</p> <p>Paired Metamorphism</p> <p>Petrography of Slate, Phyllite, Schist, Gneiss, Marble, Quartzite, Amphibolite, Khondalite, Chalcocite</p>	10

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Part - C: Learning Resource**Text Books, Reference Books, Others**

(1) 1

(2)

(3) Principles of petrology G.W. Tyrell

(4) Petrology-William, F.J. Turner & E.M. Gilbert

(5) Petrology of igneous & metamorphic rocks of India- S.C. Chatterjee

(7) Metamorphism & Metamorphic rocks of India - S.Ray

(8) Principles of igneous and metamorphic petrology John D. Winter

E-resources

1. <https://epgp.inflibnet.ac.in/Home>2. <https://archive.org/details/in.ernetdli.2015.233340/page/n15/mode/2up>3. <https://egyankosh.ac.in/>4. <https://sites.google.com/ignou.ac.in/bscgeology>5. SWAYAM-<https://swayam.gov.in/explorer?searchtext>6. National digital library <https://ndl.iitkgp.ac.in>7. e-PG pathshala (MHRD) portal, <https://epgp.inflibnet.ac.in>**PART - D: Assessment and Evaluation****Suggested Continuous Evaluation Methods:**

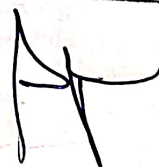

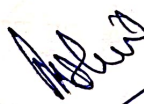
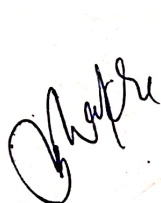
Maximum Marks: 50 Marks

Continuous Internal Assessment(CIA):15 Marks End

Semester Exam (ESE): 35 Marks

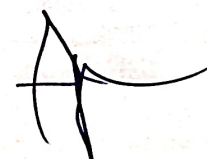
Continuous Internal Assessment (CIA): (By Course Teacher)	Internal Test / Quiz-(2): 10 & 10 Assignment/Seminar+Attendance - 05 Total Marks -15	Better marks out of the two Test/ Quiz +obtained marks in Assignment shall be considered against 15 Marks
End Semester Exam (ESE):	Laboratory / Field Skill Performance: On spot Assessment A. Performed the Task based on lab. work - 20 Marks B. Spotting based on tools & technology (written)- 10 Marks C. Viva-voce (based on principle/technology) - 05 Marks	Managed by Course teacher as per lab. status

Name and Signature of Convener & Members of CBoS:



FOUR YEAR UNDERGRADUATE PROGRAM (2025-26)
DEPARTMENT OF GEOLOGY
COURSE CURRICULUM

PART-A: Introduction			
Program: Bachelor in Science (Diploma/Degree/Honors)		Semester: III	Session:2025-2026
1	Course Code	GESC-03P	
2	Course Title	Lab. Course-03 (Igneous And Metamorphic Petrology)	
3	Course Type	Discipline Specific Course	
4	Pre-requisite (if any)	As per program	
5	Course Learning Outcomes (CLO)	On completion of Course, the students should be able to - <ul style="list-style-type: none"> Identify the igneous, and metamorphic rocks in hand specimens and thin sections. 	
6	Credit Value	1 Credit	(Credit=30 hours Laboratory or Field learning/ Training)
7	Total Marks	Max. Marks: 50	Min Passing Marks: 20
Part B: Content of the Course			
Total No. of learning-Training/performance Periods: 30 Periods (30 Hours)			
Module	Topics (Course contents)		No. of Period
Lab./Field Training/ Experiment Contents of Course,	<ul style="list-style-type: none"> Diagrammatic representation of various forms of igneous & Metamorphic rocks Diagrammatic representation of various structures of igneous & 		30
	Metamorphic rocks <ul style="list-style-type: none"> Megascope studies of various metamorphic & igneous rocks. Microscopic studies of various metamorphic & igneous rocks. Diagrammatic representation of petrographic provinces of India in outline map of India. Norms calculation 		

Part - C: Learning Resource	
Text Books, Reference Books, Others	
(1) (2) (3) Principles of petrology G.W. Tyrell (4) Petrology-H. William, F.J. Turner & E.M. Gilbert (5) A text book of sedimentary petrology -Verma& Prasad (6) Sedimentary rocks -F.J. Pettijohn (7) Introduction of sedimentology -S. Sengupta (8) Sedimentary environment -HG. Readings (9) petrology of sedimentary rocks: Sam bog (10)Earth as an evolving planet system: Kent C. Condie	
E-resources 1. https://egpg.inflibnet.ac.in/Home 2. https://archive.org/details/in.ernet.dli.2015.233340/page/n.15/mode/2up 3. https://egyankosh.ac.in/ 4. https://sites.google.com/ignou.ac.in/bscgeology 5. SWAYAM- https://swayam.gov.in/explorer?searchtext 6. National digital library https://ndl.iitkgp.ac.in 7. e-PG pathshala (MHRD) portal, https://egpg.inflibnet.ac.in	

PART- D: Assessment and Evaluation			
Suggested Continuous Evaluation Methods: Maximum Marks: 50 Marks Continuous Internal Assessment(CIA):15 Marks End Semester Exam (ESE): 35 Marks			
Continuous Internal Assessment (CIA): (By Course Teacher)	Internal Test / Quiz-(2): 10 & 10 Assignment/Seminar+Attendance - 05 Total Marks-15	Better marks out of the two Test/ Quiz +obtained marks in Assignment shall be considered against 15 Marks	
End Semester Exam (ESE):	Laboratory / Field Skill Performance: On spot Assessment D. Performed the Task based on lab. work - 20 Marks E. Spotting based on tools & technology (written)- 10 Marks F. Viva-voce (based on principle/technology) - 05 Marks		Managed by Course teacher as per lab. status

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FOUR YEAR UNDERGRADUATE PROGRAM (2025 -26)
DEPARTMENT OF GEOLOGY
COURSE CURRICULUM

Part A			
Introduction			
Program: Diploma Course		Semester-III	Year: 2025 Session: 2025-2026
S.No.			
1	Course Code	GESE-01T	
2	Course Title	Earth and Climate.	
3	Course Type	Discipline Elective Course.	
4	Pre-requisite (if any)	As per institutional guidelines.	
5	Course Learning Outcomes (CLO)	On completion of Course, the students should be able to - <ul style="list-style-type: none"> • Understand the climate and its effect. • Understand the Atmosphere, Biosphere and Hydrosphere. 	
6	Credit Value	Theory: 04	
7	Total Marks	Max. Marks: 100=70 TH + 30 Internal assessment	Minimum Passing Marks : 40

Part B Content of the Course		
Total Lectures: 45		
Unit	Topics	No. of Lectures
I	Climate system: Forcing and Responses Components of the climate system Climate Forcing, Climate controlling factors, Climate system response, response rates and interactions within the climate system, Feedbacks in climate system.	11
II	Heat budget of Earth, Incoming solar radiation, receipt and storage of heat. Heat transformation Earth's heat budget. Interactions amongst various sources of earth's heat	11
III	Atmosphere-Hydrosphere Layering of atmosphere and atmospheric Circulation Atmosphere and ocean interaction and its effect on climate, Heat transfer in ocean Global oceanic conveyor belt and its control on earth's climate. Surface and deep circulation Sea ice and glacial ice.	11
IV	Response of biosphere to Earth's climate Climate Change: natural vs. anthropogenic effects Humans and climate change, Future perspectives Brief introduction to archives of climate change. Archive based climate change data from the Indian continent Monsoon, Mechanism of monsoon. Monsoonal variation through time Factors associated with monsoonal intensity, Effects of monsoon	12

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Part C Leonine Resources

1. Rudiman, W.F., 2001. Earth's climate :past and future. Edition 2, Freeman Publisher.
2. Rohli, R. V., and Vega, A. J., 2007. Climatology. Jones and Barlett
3. Lutgens, F., Tarbuck, E., and Tasa, D., 2009. The Atmosphere: An Introduction to Meteorology. Pearson Publisher
4. Aguado, E., and Burt, J., 2009. Understanding weather

E-resources

1. <https://eggg.inflibnet.ac.in/Home>
2. <https://archive.org/details/in.ernet.dli.2015.233340/gate/n15/mode/2ug>
3. <http://12s://egyankosh.ac.in/>
4. <http://12s://sites.google.com/ignou.ac.in/bscgeology>
5. SWAYAM- <https://swayam.gov.in/explorer?searchtext>
6. National digital library- <https://ndl.iitkgg.ac.in>
7. e-PG nathshala (MHRD) nallal <https://eo-nll.inflibnet.ac.in>

PART-D: Assessment and Evaluation -Theory

Suggested Continuous Evaluation Methods:

Maximum Marks:	100 Marks
Continuous Internal Assessment (CIA):	30 Marks
End Semester Exam (ESE):	70 Marks

Continuous Internal Assessment (CIA): (By Course Teacher)	Internal Test / Quiz-(2): 20 +20 Assignment / Seminar - 10 Total Marks - 30	Better marks out of the two Test/ Quiz + obtained marks in Assignment shall be considered against 30 Marks
End Semester Exam (ESE):	Two section - A & B Section A: Q1. Objective -10 x1 = 10 Mark; Q2. Short answer type- Sx4 =20 Marks Section B: Descriptive answer type qts., out of 2 from each unit-4x10=40 Marks	

FOUR YEAR UNDERGRADUATE PROGRAM (2025-26)
DEPARTMENT OF GEOLOGY
COURSE CURRICULUM

PART-A: Introduction			
Program: Bachelor in Geology (Certificate/Diploma/Degree)		Semester: III	Session: 2025-2026
1	Course Code	GESE-0 1P	
2	Course Title	EARTH & CLIMATE	
3	Course Type	Discipline Elective Course	
4	Pre-requisite (if any)	As per program	
5	Course Learning Outcomes (CLO)	On completion of Course, the students should be able to - <ul style="list-style-type: none"> • Understand the climate and its effect. • Understand the Atmosphere, Biosphere and Hydrosphere. 	
6	Credit Value	1 Credit	(Credit=30 hours Laboratory or Field learning/ Training)
7	Total Marks	Max. Marks: 50	Min Passing Marks: 20
Part B: Content of the Course			
Total No. of learning-Training/performance Periods: 30 Periods (30 Hours)			
Module	Topics (Course contents)		No. of Period
Lab./Field Training/ Experiment Contents of Course,	1. Study of Rainfall pattern 2. Climatological Study of Indian Subcontinent 3. Assignment related to Climatic/Climate Change with Examples		30

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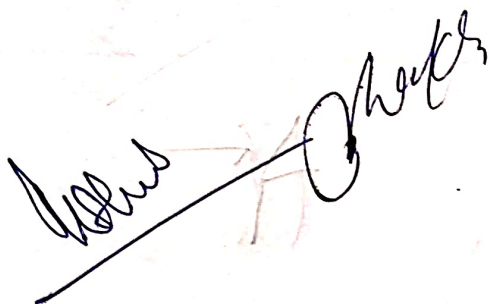

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Part-C
Learning Resource: Text Books, Reference Books, Others
Text Books Recommended- -Climatology by D.s lal -Oceanography by d.s. lal -Physical geography by DR Khullar -Physical geography by Savundra singh -Invitation to oceanography by PAUL R. PINET -Essentials of oceanography by Tom S Garrison -Introduction to physical oceanography by Robert H Stewart

PART-D:Assessment and Evaluation -Practical		
Suggested Continuous Evaluation Methods:		
Maximum Marks: 50 Marks		
Continuous Internal Assessment(CIA):11 Marks		
End Semester Exam (ESE): 35 Marks		
Continuous Internal Assessment (CIA): (By Course Teacher)	Internal Test/ Quiz-(2): 10 & 10 Assignment/Seminar +Attendance - 05 Total Marks -11	Better marks out of the two Test/ Quiz +obtained marks in Assignment shall be considered against 11 Marks
End Semester Exam (ESE):	Laboratory/ Field Skill Performance: On spot Assessment A. Performed the Task based on lab. work -20 Marks B. Spotting based on tools & technology (written) - 10 Marks C. Viva-voce (based on principle/technology) - 05 Marks	Managed by Course teacher as per lab. status

Name and Signature of Convener & Members of CBoS:

FOUR YEAR UNDERGRADUATE PROGRAM (2025-26)
DEPARTMENT OF GEOLOGY
COURSE CURRICULUM

PART-A: Introduction		
Program: Bachelor in Science (Certificate/Diploma/Degree/Honors)		Semester: 1/111/N Session: 2024-2026
1	Course Code	GEVAC-01
2	Course Title	DISASTER MANAGEMENT
3	Course Type	Value Addition Course
4	Pre-requisite(if any)	As per Government norms
5	Course Learning Outcomes (CLO)	<p>On completion of Course, the students should be able to-</p> <ol style="list-style-type: none"> 1.) Appropriate actions at all points in the cycle lead to greater preparedness, better warnings, reduced vulnerability or the prevention of disasters during the next iteration of the cycle. 2.) The complete disaster management cycle includes the shaping of public policies and plans that either modify the causes of disasters or mitigate their effects on people, property, and infrastructure. 3.) Capacity to obtain, analyze, and communicate information on risks, relief needs and lessons learned from earlier disasters in order to formulate strategies for mitigation in future scenarios with the ability to clearly present and discuss their conclusions and the knowledge and arguments behind them
6	Credit Value	2 Credits (Credit=30 hours-learning & observation)
7	Total Marks	Max.Marks:50 Min Passing Marks : 20
PART- B: CONTENT OF THE COURSE		
Total No. of Teaching-learning Periods (01 hour per period)- 30 Periods (30 Hours)		
Unit	Topics (Course Contents)	No. of Period
I	1) Meaning & Definition of Natural Disaster 2) Earthquake 3) Active fault 4) Volcanoes 5) Landslide - Types, avalanches	15
II	1) Heatwave, Wild fires 2) Cloud Burst , Hailstorm 3) Drought and Famine 4) Tsunami, Hurricane, Cyclone 5) Flood , Glacial Outburst Flood, Flash flood	15

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Part-C

Learning Resource: Text Books, Reference Books, Others

Text Books Recommended-

1. Natural Hazards and Disaster Management: Vulnerability and Mitigation RB Singh Rawat Publications 2006
2. Natural Disaster Management Soumitra Roy 2006 Abhijeet Publications
3. Disaster Management Challenges and strategies of India, Dr. M. C. Shibin Tad Notion Press 2021

Online Recourses

<https://guides.loc.gov/natural-disasters/internet-resources>

PART-D: Assessment and Evaluation -Theory

Suggested Continuous Evaluation Methods:

Maximum Marks: 50 Marks

Continuous Internal Assessment(CIA): 15 Marks

End Semester Exam (ESE): 35 Marks

Continuous Internal
Assessment (CIA):
(By Course Teacher)

Internal Test/ Quiz-(2): 5+5
Assignment / Seminar - 5
Total Marks - 30

Better marks out of the two Test/
Quiz + obtained marks in
Assignment shall be considered
against 15 Marks

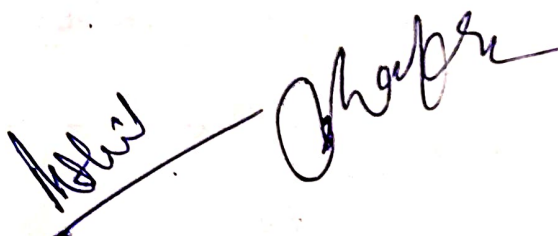
End Semester Exam
(ESE):

Two section - A & B

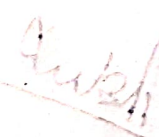
Section A: Q1. Objective - 10 x1= 10 Mark; Q2. Short answer type-
5x2=10Marks

Section B: Descriptive answer type qts., Sout of 3 from each unit-3x5=15
Marks

Name and Signature of Convener & Members ofCBoS:







DEPARTMENT OF GEOLOGY
GOVT. DIGVIJAY AUTONOMOUS COLLEGE, RAJNANDGAON (C.G.)
B.Sc. – V Semester Geology 2025-2026

Session : 2024-25	Program : B.Sc.
Semester : V	Subject : Geology
Course Type : DSC	Course Code:
Course Title:	STRATIGRAPHY
Credit : 3	Lectures : 45
M.M. 100 = (ESE 80+IA 20)	Minimum passing Marks : 40%

Course outcome(CO):- On completion of course, the students should be able to

1. Understand the geologic time scale and place important geologic events in a temporal framework.
2. Explain the principles of stratigraphy and various types of stratigraphic units.
3. Describe the distribution, classification and economic importance of Archaean and proterozoic rocks of India.
4. Describe the distribution, classification and economic importance of Palaeozoic rocks of India.

Describe the distribution, classification and economic importance of Mesozoic rocks of India.

Theory Core Course : I Course Name :StratigraphyCredits : 3 Lecture 45	Unit & Hours	Contents
	I - 11	Introductory Idea about: Principles of stratigraphy: Geological time scale. Basic concept of lithostratigraphic, chronostratigraphic & biostratigraphic units. Structural & physical subdivision and characteristic features of Indian subcontinent. Stratigraphic correlation.
	II - 11	Introductory Idea about: Distribution, classification & economic importance of Archaean rocks of South India, Central India, Bastar, Rajasthan, Bundelkhand and Singhbhum region. Distribution, Stratigraphy & Economic Importance of rocks of Cuddapah Supergroup, Vindhyan Supergroup, Chhattisgarh Supergroup, Indravati Group, Delhi Supergroup and their equivalent formations
	III - 11	Introductory Idea about: Stratigraphy, Palaeoclimate, Geographical distribution & economic aspects of Gondwana Supergroup. Stratigraphy, Distribution & age of Deccan Traps. Stratigraphy, Distribution & fossil contents of Bagh & Lameta Bed. Distribution, Stratigraphy & Palaeontology of Salt Range group of rocks.
	IV - 12	Introductory idea about: Stratigraphy, Distribution, Fossil content of Triassic rocks of Spiti valley and Cretaceous rocks of Tiruchirapalli, Stratigraphy, Distribution, Fossil content & Economic importance of Jurassic rocks of Kutch-Region, Distribution, Stratigraphy, Economic importance of Tertiary rocks of Assam Region. Distribution, Stratigraphy & vertebrate palaeontological importance of Siwalik group of rocks.

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Text Books, Reference Books & E-resources	TEXT BOOKS Recommended: 01. Boggs Sam Jr., 1995: Principles of Sedimentology and Stratigraphy. Prentice Hall. 02. Kumar, Ravindra, 1985 : Fundamentals of Historical Geology and Stratigraphy of India. Wiley Eastern Ltd. 03. Naqvi, S.M. and Rogers, J.J.W, 1987: Precambrian Geology of India. Oxford University Press. Reference Books: Geology of India volume I and II – M. Ramakrishnan and R. Vaidyanathan Online Resources: (e- Resources/ e- Books/ e- Learning Portals) https://egyankosh.ac.in/
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Stratigraphy lab Course

Session : 2025-26	Program : B.Sc.
Semester : V	Subject : Geology
Course Type : DSC LAB	Course Code:
Course Title:	STRATIGRAPHY LAB
Credit :1	30 hours
M.M. 50	Minimum passing Marks : 40%

Course Learning Outcome (CLO): On completion of Course, the students will be able to

1. Prepare the geologic time scale and place important geologic events in a temporal framework.
 2. Correlate various of rock formations of India.
 3. Plot the distribution of Archaean and proterozoic rocks on outline map of India .
 4. Plot the distribution of Palaeozoic rocks on the outline map of India.
- Plot the distribution of Mesozoic rocks, Deccan trap and Siwalik rocks on the outline map of India.

Lab Course	Topics
1	Preparation of the geologic time scale and place important geologic events in a temporal framework.
2	Correlation of various rock formations of India.
3	Plotting the distribution of Archaean and proterozoic rocks on outline map of India.
4	Plotting the distribution of Palaeozoic rocks on the outline map of India.
5	Plotting the distribution of Mesozoic rocks, Deccan trap and Siwalik rocks on the outline map of India.

Text Books, Reference Books & E-resources	<p>TEXT BOOKS Recommended Kumar, Ravindra, 1985 : Fundamentals of Historical Geology and Stratigraphy of India. Wiley Eastern Ltd. Naqvi, S.M. and Rogers, J.J.W, 1987: Precambrian Geology of India. Oxford University Press</p> <p>Online Resources: (e-Resources/ e- Books/ e- Learning Portals) https://egyankosh.ac.in/</p>
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Student Marking System of Theory

4 Credits – 100 marks

Internal – 20 Marks

External – 80 Marks – Very Short Answer Questions – 16 Marks (8 Ques. *2 Marks).

Short Answer Questions – 24 Marks (4 Ques. *6 Marks).

Long Answer Questions – 40 Marks (4 Ques. *10 Marks)

Marking System of Practical

2 Credits – 50 Marks.

Internal – 10 Marks

End Term Exam – 40 Marks.

Written (30 Marks) + Record (5 Marks) + Viva (5 Marks).

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DEPARTMENT OF GEOLOGY
GOVT. DIGVIJAY AUTONOMOUS COLLEGE, RAJNANDGAON (C.G.)
B.Sc. – V Semester Geology 2025-2026

Session : 202 -2	Program : B.Sc.
Semester : V	Subject : Geology
Course Type : DSE-I	Course Code:
Course Title:	PALAEONTOLOGY
Credit : 3	Lectures : 45
M.M. 100 = (ESE 80+IA 20)	Minimum passing Marks : 40%

Course Outcome(CO) :-On completion of course, the students should be able to

1. Understand the modes of preservation of fossils.
2. Describe morphology and geological distribution of Brachiopods, Lamellibranches, Trilobites, Gastropods, Graptolites and Echinoids.
3. Explain morphological characters of plant fossils and their significance
4. Discuss various applications of Palaeontology.
5. Understand the fundamental concepts of Micropalaeontology.

Theory Core Course : I Course Name :Palaeontology Credits : 3 Lecture 45	Unit & Hours	Contents
	I - 12	Definition and scope of Palaeontology: Fossils- definition, Essentials for fossilization, modes of fossilization. Uses of fossils; Index fossils & their significance. Application of Palaeontology in the study of Stratigraphy, Palaeoecology and Palaeogeography.
	II - 11	Elementary idea about morphology & geological distribution of Brachiopoda Lamellibranchia , Trilobite and Graptolite fossils.
	III - 11	Elementary idea about morphology & geological distribution of Gastropoda, Cephalopoda and Echinoidea fossils.
	IV - 11	Elementary Idea about morphology & geologic distribution of Foraminifera, Anthozoa and Graptolite fossils. Elementary idea about Micropalaeontology & its significance. Study of plant fossils & their significance

Text Books, Reference Books & E-resources	TEXT BOOKS Recommended:
	01. Clarkson, E.N.K.,1998: Invertebrate Palaeontology and Evolution. IV Ed. Blackwell.
	02. Jain,P.C., and Anantharaman, M.S., 1996 : Palaeontology – Evolution and animal distribution. Vishal Publications.
	03. Prothero, D.R., 1998: Bringing fossils to life- An Introduction to Palaeobiology. McGrawHill.
	04. Stearn, C.W. and Carrol, R.L., 1989: Palaeontology- the record of life. John Wiley.

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	<p>05. Henry Woods: Palaeontology Invertebrate. CBS Publishers.</p> <p>06. Twenhofel and Shrock : Principles of Invertebrate Paleontology. CBS Publishers</p> <p>Reference Books:</p> <p>Treatise on Invertebrate Paleontology, edited by R. C. Moore, 24 volumes. Published by the Geological Society of America and University of Kansas Press</p> <p>Online Resources: (e- Resources/ e- Books/ e- Learning Portals)</p> <p>https://egyankosh.ac.in/</p>
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Notes Chapter

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Palaeontology lab Course

Session : 2025-26	Program : B.Sc.
Semester : V	Subject : Geology
Course Type : DSE-ILAB	Course Code:
Course Title:	PALAEONTOLOGY LAB
Credit : 1	30 hours
M.M. 50	Minimum passing Marks : 40%

Course Learning Outcome (CLO): On completion of Course, the students will be able to

On completion of Course, the students will be able to

1. Identify various Brachiopoda and Lamellibranchia fossils on the basis of their morphological characters
2. Identify various Trilobite and Graptolite fossils on the basis of their morphological characters
3. Identify various Cephalopoda and Echinoidea fossils on the basis of their morphological characters
4. Identify various Gastropoda fossils on the basis of their morphological characters
5. Identify various plant fossils on the basis of their morphological characters

Lab Course	Topics
1	Study of morphological characters of Brachiopoda and Lamellibranchia fossils.
2	Study of morphological characters of Trilobite and Graptolite fossils
3	Study of morphological characters of Cephalopoda and Echinoidea fossils.
4	Study of morphological characters of & geological distribution of Gastropoda fossils
5	Study of morphological characters of plant fossils

Text Books, Reference Books & E-resources	Text Books Recommended:
	<p>Jain, P.C., and Anantharaman, M.S., 1996 : Palaeontology – Evolution and animal distribution. Vishal Publications.</p> <p>K. Subramani. Palaeontology Practical Manual. Vishal Publications.</p> <p>Henry Woods: Palaeontology Invertebrate. CBS Publishers.</p> <p>Twenhofel and Shrock : Principles of Invertebrate Paleontology. CBS Publishers</p> <p>Online Resources: (e- Resources/ e- Books/ e- Learning Portals)</p> <p>https://egyankosh.ac.in/</p>

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Student Marking System of Theory

4 Credits – 100 marks

Internal – 20 Marks

External – 80 Marks – Very Short Answer Questions – 16 Marks (8 Ques. *2 Marks).

Short Answer Questions – 24 Marks (4 Ques. *6 Marks).

Long Answer Questions – 40 Marks (4 Ques. *10 Marks)

Marking System of Practical

2 Credits – 50 Marks

Internal – 10 Marks

End Term Exam – 40 Marks.

Written (30 Marks) + Record (5 Marks) + Viva (5 Marks).

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DEPARTMENT OF GEOLOGY

GOVT. DIGVIJAY AUTONOMOUS COLLEGE, RAJNANDGAON (C.G.)

B.Sc. – V Semester Geology 2025-2026

Session : 2025-26	Program : B.Sc.
Semester : V	Subject : Geology
Course Type : DSE-II	Course Code:
Course Title:	Applied Geology
Credit : 3	Lectures : 45
M.M. 100 = (ESE 80+IA 20)	Minimum passing Marks : 40%

Course Outcome (CO):- On completion of course, the students should be able to

1. Understand the basics of Environmental Geology.
2. Evaluate the impact of human activities on soil, groundwater and other natural resources.
3. Describe about the basic principles of Geophysics and its application.
4. Explain the various geological methods of Mineral exploration.
5. Describe geophysical methods of mineral exploration.
6. Understand the methods of groundwater exploration.
7. Outline the basics of engineering geology and its applications.
8. Understand the occurrence and availability of groundwater resources and the role of the hydrologic cycle.

Theory Core Course : I Course Name : Applied Geology Credits : 3 Lecture 45	Unit & Hours	Contents
	I - 11	Definition and scope of Environmental Geology. Fundamental concepts of Environmental Geology. Introductory ideas about natural disaster: Flood, Tsunami, Earthquake, Volcanism, Landslides; their causes and mitigation.
	II - 11	Definition and scope of Hydrogeology. Hydrologic cycle: Mode of occurrence of ground water, quality of ground water. Definition and limitation of Darcy's law: Hydrologic properties of rocks. Classification of Aquifers. Ground water provinces of India.
	III - 11	Engineering Geology & its importance, Engineering properties of rocks. Dams: classification and elements of Dams. Geological conditions for construction of large Dams. Elements of tunnels. Geological conditions for construction of large Tunnels. Geological conditions for construction of Roads and Bridges Problems and remedies in Dams Tunnels, Roads and Bridges.
	IV - 12	Elementary idea about prospecting and exploration of mineral deposits. Introduction to Surface methods of prospecting and exploration. Introduction to subsurface methods of prospecting and exploration. Drilling: Definition and types. Sampling: Definition and types. Elementary idea about principle of Geophysical prospecting techniques: Gravity, Electrical & Magnetic methods. Aerial and seismic prospecting methods. Environmental impact of over exploitation of mineral resources. Principles of mineral economics. National mineral policy.

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Text Books,
Reference Books
& E-resources

TEXT BOOKS Recommended:

1. H.K. Setty & J.N. K. J.

2. V.K. F. Z. D. O. K. J. D. H. K. W. F. O. K. K. & V. K. J. - I. H. - E. K. A. T. J. S. D. J.

3. I. Z. K. J. A. F. H. K. D. [K. F. U. D. H. & C. H. - D. S. - F. L. A. G.

4. I. Z. K. J. K. S. F. X. D. H. K. W. F. O. K. K. H. K. K. X. & 3. X. Q. I. R. K. [I. Q. U. O. V. D. J. , O. A. J. ? K. Q. O. A. " K. H.

(5) Principles of Engineering Geology & Geotechniques- Krynine & Judd.

(6) Geophysical methods in Geology- P.V. Sharma.

(7) Environmental Geology- K.S. Valdiya (1987).

(8) Principle of Engineering Geology – K.M. Bangar.

(9) Engineering and General Geology – Parbin Singh.

Reference Books:

(1) Groundwater Hydrology- D.K. Todd.

(2) Courses in Mining Geology- R.N.P. Arogyaswami.

(3) Ground water- Assessment, Development & Management- K.R. Karanth.

Online Resources: (e- Resources/ e- Books/ e- Learning Portals).

<https://egyankosh.ac.in/>

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Senior Professor of Science Faculty

Department members

Alumnus

Student

Applied Geology lab Course

Session : 2025-26	Program : B.Sc.
Semester : V	Subject : Geology
Course Type : DSE-II LAB	Course Code:
Course Title:	APPLIED GEOLOGY LAB
Credit : 1	30 hours
M.M. 50	Minimum passing Marks : 40%

Course Learning Outcome (CLO): On completion of Course, the students will be able to

On completion of Course, the students will be able to

1. Demarcate the seismic zones in outline map of India.
2. Demarcate the Earthquake and volcanic belts of the world.
3. Identify and classify the rocks on the basis of their engineering and hydrogeological properties.
4. Suggests about ideal dam, tunnel and road site selection.
5. Calculate hydraulic conductivity, porosity and permeability.

S.No.	List of Experiments
1	Demarcation of the seismic zones in outline map of India.
2	Demarcation of the Earthquake and volcanic belts of the world.
3	Identification and classification of the rocks on the basis of their engineering properties.
4	Identification and classification of the basis of their hydrogeological properties.
5	Problems related to dam, tunnel and road site selection.

Text Books, Reference Books & E-resources	<p>TEXT BOOKS Recommended:</p> <p>1. H.K. Setyo Kku & ,y-ds- fJNkfj;k</p> <p>2. vkfFkZd ,oaO;kogkfjdHkwfoKku&vkj-ih- ekatjsdj</p> <p>3. izkfjHkd-[kfudh&ch-d s- flag</p> <p>4. izk;ksfxdHkwfoKku Hkx&3&xqlrk] iquoVd] ,oaj?kqoa"kh</p> <p>(5) Principles of Engineering Geology & Geotechniques- Krynine & Judd.</p> <p>(6) Geophysical methods In Geology- P.V. Sharma.</p> <p>(7) Environmental Geology- K.S. Valdiya (1987).</p>
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(8) Principle of Engineering Geology – K.M. Bangar.

(9) Engineering and General Geology – Parbin Singh.

Reference Books:

(1) Groundwater Hydrology- D.K. Todd.

(2) Courses in Mining Geology- R.N.P. Argyaswami.

(3) Ground water- Assessment, Development & Management- K.R. Karanth.

Online Resources: (e- Resources/ e- Books/ e- Learning Portals)

<https://egyankosh.ac.in/>

Student Marking System of Theory

4 Credits – 100 marks

Internal – 20 Marks

External – 80 Marks – Very Short Answer Questions – 16 Marks (8 Ques. *2 Marks):

Short Answer Questions – 24 Marks (4 Ques. *6 Marks).

Long Answer Questions – 40 Marks (4 Ques. *10 Marks)

Marking System of Practical

2 Credits – 50 Marks

Internal – 10 Marks

End Term Exam – 40 Marks.

Written (30 Marks) + Record (5 Marks) + Viva (5 Marks).

Adil

Chakr

[Signature]