

DEPARTMENT OF GEOLOGY
COURSE CURRICULUM & MARKING SCHEME

B.Sc. V, VI Semester

GEOLOGY

(Based on Choice Based Credit System)

SESSION : 2025-26



ESTD : 1958

**GOVT. V.Y.T. PG AUTONOMOUS COLLEGE,
DURG, 491001 (C.G.)**

(Former Name – Govt. Arts & Science College, Durg)

NAAC Accredited Grade A⁺, College with CPE - Phase III (UGC), STAR COLLEGE (DBT)

Phone : 0788-2212030

Website - www.govtsciencecollegedurg.ac.in, Email – autonomousdurg2013@gmail.com

GOVT. V.Y.T. PG AUTONOMOUS COLLEGE DURG

FOUR YEAR UNDERGRADUATE PROGRAM

DEPARTMENT OF GEOLOGY

COURSE CURRICULUM 2025-26

DSC			DSE-I			DSE-II		
Sem.	Code	Title	Sem.	Code	Title	Sem.	Code	Title
V	BGL-501	Stratigraphy	V	BGL-502	Palaeontology	V	BGL-503	Geology and Mineral Resources of Chhattisgarh
	BGLL-501	Stratigraphy Lab Course		BGLL-502	Palaeontology Lab Course		BGLL-503	Geology and Mineral Resources of Chhattisgarh Lab Course
VI	BGL-601	Economic Geology	VI	BGL-602	Applied Geology	VI	BGL-603	Photogeology and Remote Sensing
	BGLL-601	Economic Geology Lab Course		BGLL-602	Applied Geology Lab Course		BGLL-603	Photogeology and Remote Sensing Lab Course

Chairperson /H.O.D

Subject Expert

Subject Expert

Subject Expert

Senior Professor of Science Faculty

Departmental members

Alumnus

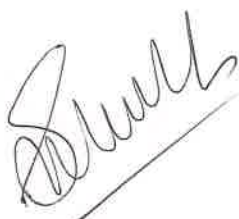
Student

Four Year Undergraduate Program

Semester V

Session 2025-26

DSC- Stratigraphy

 Chairperson /H.O.D	 Subject Expert	 Subject Expert	Subject Expert
 Senior Professor of Science Faculty	 Departmental members	Alumnus	Student

GOVT. V.Y.T.PG AUTONOMOUS COLLEGE DURG
FOUR YEAR UNDERGRADUATE PROGRAM
DEPARTMENT OF GEOLOGY
COURSE CURRICULUM 2025-26

PART A: INTRODUCTION				
Program: B.Sc.		Class: Semester - V		Session:2025-2026
1	Course Code	BGL- 501		
2	Course Title	Stratigraphy		
3	Course Type	DSC		
4	Course Learning Outcome (CLO)	This Course will enable the students 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. 5. Describe the distribution, classification and economic importance of Mesozoic rocks of India.		
5	Credit Value	3Credits	1 credit =15 Hours – Learning and Observation	
6	Total Marks	Maximum Marks : 100		Minimum Passing Marks: 40
PART B: CONTENT OF THE COURSE				
Total no. of Teaching/ Learning Periods = 45 Periods (45 Hours)				
Unit	Topics (COURSE CONTENTS)			No. of Periods
I	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.			9
II	Introductory idea about: Distribution, classification & economic importance of Archaeozoic rocks of South India, Central India, Bastar , Rajasthan, Bundelkhand and Singhbhum region.			9
III	Introductory idea about: Distribution, Stratigraphy & Economic Importance of rocks of Cuddapah Supergroup, Vindhyan Supergroup, Chhattisgarh Supergroup, Indravati Group, Delhi Supergroup and their equivalent formations.			9
IV	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.			9
V	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.			9

Chairperson /H.O.D

Subject Expert

Subject Expert

Subject Expert

Senior Professor of Science Faculty

Departmental members

Alumnus

Student

PART C - LEARNING RESOURCES**Text Books, Reference Books, Other 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/>

PART D: ASSESSMENT AND EVALUATION**Suggested Continuous Evaluation Methods:**

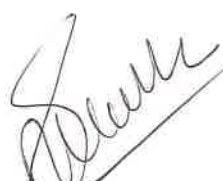
Maximum Marks: 80 Marks

Continuous Comprehensive Evaluation (CCE): 20 Marks

Semester End Exam (SEE): 80 Marks

Internal Assessment: Continuous Comprehensive Evaluation (CCE)	Internal Test of 15 Marks and Assignment of 15 Marks
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Semester End Exam (SEE)	Pattern -FOUR Questions (A, B, C, D) from each Unit	
	Question - A & B: (Compulsory) Very short answer type (01 each)	04 x 5 = 20 Marks
	Question - C: Short answer type question	05 x 5 = 25 Marks
	Question -D: Long answer type question	07 x 5 = 35 Marks
	Total = 80 Marks	


Chairperson /H.O.D


Subject Expert


Subject Expert

Subject Expert


Senior Professor of Science Faculty


Departmental members

Alumnus

Student

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

Lab Course

PART A: INTRODUCTION			
Program: B.Sc.		Class: Semester - V	Session:2025-2026
1	Course Code	BGLL- 501	
2	Course Title	Stratigraphy Labcourse	
3	Course Type	Practical	
4	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. 5. Plot the distribution of Mesozoic rocks, Deccan trap and Siwalik rocks on the outline map of India.	
5	Credit Value	1 Credit	1 credit =15 Hours – Learning and Observation
6	Total Marks	Maximum Marks : 50	Minimum Passing Marks: 20

PART B: CONTENT OF THE COURSE

S.No.	List of Experiments
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.

PART C - LEARNING RESOURCES

Text Books, Reference Books, Other Resources

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

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

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

PART D: ASSESSMENT AND EVALUATION

Suggested Continuous Evaluation Methods:

Maximum Marks: 50 Marks

(Will include Internal assessment, Lab records and End Semester Viva/Voce and performance)

Semester End Laboratory performance: As per Dept. (LOCF)

Exam (SEE)

Chairperson /H.O.D

Subject Expert

Subject Expert

Subject Expert

Senior Professor of Science Faculty

Departmental members

Alumnus

Student

Four Year Undergraduate Program
Semester V
Session 2025-26

DSE - I Palaeontology



Chairperson /H.O.D



Subject Expert



Subject Expert

Subject Expert



Senior Professor of Science Faculty



Departmental members

Alumnus

Student

GOVT. V.Y.T.PG AUTONOMOUS COLLEGE DURG
FOUR YEAR UNDERGRADUATE PROGRAM
DEPARTMENT OF GEOLOGY
COURSE CURRICULUM 2025-26

PART A: INTRODUCTION			
Program: B.Sc.		Class:	Semester - V
		Session: 2025-2026	
1	Course Code	BGL-502	
2	Course Title	Palaeontology	
3	Course Type	DSE-I	
4	Course Learning Outcome (CLO)	This Course will enable the students 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.	
5	Credit Value	3Credits	1 credit =15 Hours – Learning and Observation
6	Total Marks	Maximum Marks : 100	Minimum Passing Marks: 40
PART B: CONTENT OF THE COURSE			
Total no. of Teaching/ Learning Periods = 45 Periods (45 Hours)			
Unit	Topics (COURSE CONTENTS)		No. of Periods
I	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.		9
II	Elementary idea about morphology & geological distribution of Brachiopoda Lamellibranchia, and Trilobite fossils.		9
III	Elementary idea about morphology & geological distribution of Gastropoda, Cephalopoda and Echinoidea fossils.		9
IV	Elementary idea about morphology & geologic distribution of Foraminifera, Anthozoa and Graptolite fossils.		9
V	Elementary idea about Micropalaeontology & its significance. Study of plant fossils & their significance.		9

Chairperson /H.O.D

Subject Expert

Subject Expert

Subject Expert

Senior Professor of Science Faculty

Departmental members

Alumnus

Student

PART C - LEARNING RESOURCES**Text Books, Reference Books, Other Resources****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.
05. Henry Woods: Palaeontology Invertebrate. CBS Publishers.
06. Twenhofel and Shrock : Principles of Invertebrate Paleontology. CBS Publishers

Reference Books:

Treatise on Invertebrate Paleontology, edited by R. C. Moore, 24 volumes. Published by the Geological Society of America and University of Kansas Press

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

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

PART D: ASSESSMENT AND EVALUATION**Suggested Continuous Evaluation Methods:**

Maximum Marks: ~~80~~ Marks

Continuous Comprehensive Evaluation (CCE): ~~20~~ Marks

Semester End Exam (SEE): ~~80~~ Marks

Internal Assessment:

Continuous Comprehensive Evaluation (CCE)

Internal Test of 15 Marks and Assignment of 15 Marks

Semester End Exam (SEE)**Pattern -FOUR Questions (A, B, C, D) from each Unit**

Question - A & B: (Compulsory) Very short answer type (02 each)

04 x 5 = 20 Marks

Question - C: Short answer type question

05 x 5 = 25 Marks

Question -D: Long answer type question

07 x 5 = 35 Marks

Total = ~~80~~ Marks


Chairperson /H.O.D


Subject Expert


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Senior Professor of Science Faculty


Departmental members

Alumnus

Student

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

Lab Course

PART A: INTRODUCTION			
Program: B.Sc.		Class:	Semester - V
			Session:2025-2026
1	Course Code	BGLL-502	
2	Course Title	Palaeontology Labcourse	
3	Course Type	Practical	
4	Course Learning Outcome (CLO)	On completion of Course, the students will be able 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	
5	Credit Value	1Credit	1 credit =15 Hours – Learning and Observation
6	Total Marks	Maximum Marks : 50	Minimum Passing Marks: 20

PART B: CONTENT OF THE COURSE	
S.No.	List of Experiments
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

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

PART D: ASSESSMENT AND EVALUATION	
Suggested Continuous Evaluation Methods:	
Maximum Marks: 50 Marks	
(Will include Internal assessment, Lab records and End Semester Viva/Voce and performance)	
Semester End Exam (SEE)	Laboratory performance: As per Dept. (LOCF)

Chairperson /H.O.D

Subject Expert

Subject Expert

Subject Expert

Senior Professor of Science Faculty

Departmental members

Alumnus

Student

Four Year Undergraduate Program

Semester V

Session 2025-26

**DSE-II GEOLOGY AND MINERAL RESOURCES OF
CHHATTISGARH**

GOVT. V.Y.T.PG AUTONOMOUS COLLEGE DURG

FOUR YEAR UNDERGRADUATE PROGRAM

DEPARTMENT OF GEOLOGY

COURSE CURRICULUM 2025-26

PART A: INTRODUCTION			
Program: B.Sc.		Class: Semester - V	Session:2025-2026
1	Course Code	BGL- 503	
2	Course Title	GEOLOGY AND MINERAL RESOURCES OF CHHATTISGARH	
3	Course Type	DSE	
4	Course Learning Outcome (CLO)	This Course will enable the students to: 1. Understand the distribution of geological formations of Chhattisgarh state 2. Describe the mode of occurrence of mineral deposits in Chhattisgarh state 3. Discuss about the scope for mineral based industries in Chhattisgarh 4. Demarcate the geological formations in the map of Chhattisgarh 5. Demarcate the distribution of mineral deposits in the map of Chhattisgarh	
5	Credit Value	3Credits	1 credit =15 Hours – Learning and Observation
6	Total Marks	Maximum Marks : 100	Minimum Passing Marks: 40
PART B: CONTENT OF THE COURSE			
Total no. of Teaching/ Learning Periods = 45 Periods (45 Hours)			
Unit	Topics (COURSE CONTENTS)		No. of Periods
I	Summary of Geological formations of Chhattisgarh. Geological map of Chhattisgarh. Archaeozoic formations of Chhattisgarh: Sukma and Bengpal Groups, Bhopalpatnam Granulite Belt, Bailadila Group, Kotri- Dongargarh Belt. Sonakhan Group, Abujhmar Group, Khairagarh Group, Nandgaon Group, Kanker Granite and Dongargarh Granite.		9
II	Chhattisgarh Supergroup, Indravati Group, Rock formations of Gondwana Supergroup, Umaria and Manendragarh marine beds, Deccan Trap		9
III	Geology, mineralogy and salient features of Iron ore deposits of Chhattisgarh. Bauxite deposits of Chhattisgarh. Tin deposits of Chhattisgarh, Radioactive minerals and REE in Chhattisgarh, Gold deposits of Chhattisgarh		9
IV	Geology, mineralogy and salient features of limestone and dolomite deposits of Chhattisgarh, coal deposits of Chhattisgarh, mica deposits of Chhattisgarh, precious and semiprecious minerals in Chhattisgarh, fertilizer minerals in Chhattisgarh		9
V	Mineral specifications and mineral based industries in Chhattisgarh : Steel industry, Coal industry, Cement industry, Precious and Semi-precious stone industry, Fertilizer industry, Dimension stone and construction material industry.		9

Chairperson /H.O.D

Subject Expert

Subject Expert

Subject Expert

Senior Professor of Science Faculty

Departmental members

Alumnus

Student

PART C - LEARNING RESOURCES**Text Books, Reference Books, Other Resources****Text Books Recommended:**

Economic mineral deposits of India- Umeshwar Prasad.

Ore-deposit of India- Gokhale & Rao

Geology and Mineral Resources of Chhattisgarh: Geological Survey of India, Miscellaneous Publication No. 30.

Reference Books:

Geology and Mineral Resources of Chhattisgarh H. M. Ramachandra and Avisekh Ghosh. Geological Society of India,

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

https://www.researchgate.net/publication/362705237_Mineral_Resources_of_Chhattisgarh_-_A_Perspective

PART D: ASSESSMENT AND EVALUATION**Suggested Continuous Evaluation Methods:**

Maximum Marks: 80 Marks

Continuous Comprehensive Evaluation (CCE): 20 Marks

Semester End Exam (SEE): 80 Marks

Internal Assessment:

Continuous Comprehensive Evaluation(CCE)

Internal Test of 15 Marks and Assignment of 15 Marks

Semester End Exam (SEE)**Pattern -FOUR Questions (A, B, C, D) from each Unit**

Question - A & B: (Compulsory) Very short answer type (01 each) $04 \times 5 = 20$ Marks

Question - C: Short answer type question $05 \times 5 = 25$ Marks

Question -D: Long answer type question $07 \times 5 = 35$ Marks

Total = 80 Marks

Chairperson /H.O.D

Subject Expert

Subject Expert

Subject Expert

Senior Professor of Science Faculty

Departmental members

Alumnus

Student

GOVT. V.Y.T.PG AUTONOMOUS COLLEGE DURG

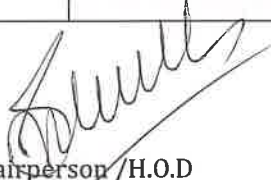
FOUR YEAR UNDERGRADUATE PROGRAM

DEPARTMENT OF GEOLOGY

COURSE CURRICULUM 2025-26

Lab Course

PART A: INTRODUCTION			
Program: B.Sc.		Class: Semester - V	Session:2025-2026
1	Course Code	BGLL-503	
2	Course Title	Geology and Mineral Resources of Chhattisgarh Labcourse	
3	Course Type	Practical	
4	Course Learning Outcome (CLO)	This Course will enable the students to: 1. Demarcate geological formations on the outline map of Chhattisgarh 2. Demarcate various mineral deposits on the outline map of Chhattisgarh 3. List out major and minor minerals occurring in Chhattisgarh 4. Discuss the specifications of minerals used in various mineral based industries	
5	Credit Value	1Credit	1 credit =15 Hours – Learning and Observation
6	Total Marks	Maximum Marks : 50	Minimum Passing Marks: 20
PART B: CONTENT OF THE COURSE			
S.No.	List of Experiments		
1	Study of geological map of Chhattisgarh and plotting of various formations in outline map of Chhattisgarh		
2	Plotting of various metallic mineral deposits in the map of Chhattisgarh		
3	Plotting of Coal deposits & gem mineral occurrences in outline map of Chhattisgarh		
4	Preparation of List of major and minor minerals and tabulation of their reserves in Chhattisgarh		
5	Preparation of charts of specification of minerals used in Cement industry, Ferro-alloy industry, Steel industry, Aluminium based industry, Ceramic and fertilizer industry		

 Chairperson/H.O.D

 Subject Expert

 Subject Expert

 Subject Expert

 Senior Professor of Science Faculty

 Departmental members

Alumnus

Student

PART C - LEARNING RESOURCES**Text Books, Reference Books, Other Resources****Text Books Recommended:**

Economic mineral deposits of India- Umeshwar Prasad.

Ore-deposit of India- Gokhale & Rao

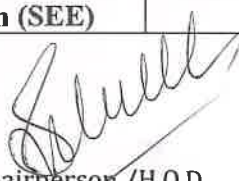
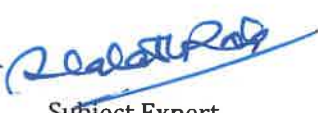
Geology and Mineral Resources of Chhattisgarh: Geological Survey of India, Miscellaneous Publication No. 30.

Reference Books:

Geology and Mineral Resources of Chhattisgarh H. M. Ramachandra and Avisekh Ghosh. Geological Society of India,

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

https://www.researchgate.net/publication/362705237_Mineral_Resources_of_Chhattisgarh_-_A_Perspective

PART D: ASSESSMENT AND EVALUATION**Suggested Continuous Evaluation Methods:****Maximum Marks:****50 Marks****(Will include Internal assessment, Lab records and End Semester Viva/Voce and performance)****Semester End
Exam (SEE)****Laboratory performance: As per Dept. (LOCF)**
Chairperson /H.O.D
Subject Expert
Subject Expert

Subject Expert


Senior Professor of Science Faculty
Departmental members

Alumnus

Student

Four Year Undergraduate Program
Semester VI
Session 2025-26

DSC - Economic Geology

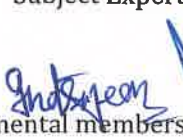

Chairperson /H.O.D

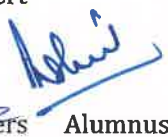

Subject Expert


Subject Expert

Subject Expert


Senior Professor of Science Faculty


Departmental members


Alumnus

Student

GOVT. V.Y.T.PG AUTONOMOUS COLLEGE DURG
FOUR YEAR UNDERGRADUATE PROGRAM
DEPARTMENT OF GEOLOGY
COURSE CURRICULUM 2025-26

PART A: INTRODUCTION			
Program: B.Sc.		Class: Semester - VI	Session: 2025-2026
1	Course Code	BGL-601	
2	Course Title	ECONOMIC GEOLOGY	
3	Course Type	DSC	
4	Course Learning Outcome (CLO)	This Course will enable the students to: 1. Explain about the formation of mineral deposits 2. Demonstrate the distribution of mineral resources. 3. Discuss the Classification of the mineral deposits 4. Outline the various mineral resources of India 5. Understand about the origin, occurrence and properties of Coal 6. Discuss the age and occurrences of the coal 7. Explain about the petrography of Coal 8. Outline the origin and occurrences of the Petroleum	
5	Credit Value	3Credits	1 credit =15 Hours – Learning and Observation
6	Total Marks	Maximum Marks : 100	Minimum Passing Marks: 40
PART B: CONTENT OF THE COURSE			
Total no. of Teaching/ Learning Periods = 45 Periods (45 Hours)			
Unit	Topics (COURSE CONTENTS)		No. of Periods
I	Economic Geology introduction & its perspectives; Global mineral deposit & resource. Distribution of mineral deposits in time & space. Classification of mineral deposits. Geological thermometers. Magmatic & Hydrothermal processes of mineral formation.		9
II	Weathering products & Residual deposits. Oxidation & supergene sulphide enrichment processes. Sedimentary processes of ore formation. Placer deposits.		9
III	Geological and Geographical distribution, mode of occurrence and mineralogy of Iron, Manganese, Chromium, Copper, Lead, Zinc, Gold and Aluminium ore deposits of India.		9
IV	Refractory and Fertilizer minerals. Minerals used in cement & chemical industries. Coal deposits: Origin, Definition & stratigraphy. Fundamentals of coal petrography. Peat, Lignite, Bituminous & Anthracite. Indian coal deposits.		9
V	Origin of Natural-hydrocarbons, migration & accumulation. Types of oil traps; Structural, stratigraphic and composite. Offshore & Onshore oil deposits of India. Radioactive minerals: Mineralogy, Prospecting techniques, Geological & Geographical distribution of radioactive-minerals.		9


 Chairperson /H.O.D


 Subject Expert


 Subject Expert

Subject Expert


 Senior Professor of Science Faculty


 Departmental members

Alumnus

Student

PART C - LEARNING RESOURCES

Text Books, Reference Books, Other Resources

Text Books Recommended:

- (1) आर्थिक भूविज्ञान— कृष्ण गोपाल व्यास
- (2) आर्थिक एवं व्यावहारिक भूविज्ञान— आर.पी. मांजरेकर
- (3) प्रायोगिक भूविज्ञान भाग-3— गुप्ता, पुनवटकर
- (4) Economic mineral deposits of India- Umeshwar Prasad.
- (5) Economic mineral deposits- A.Bateman
- (6) Ore-deposit of India- Gokhale & Rao

Reference Books:

India's Mineral Resource- S. Krishnaswami

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

[https //egyankosh.ac.in](https://egyankosh.ac.in)

PART D: ASSESSMENT AND EVALUATION

Suggested Continuous Evaluation Methods:

Maximum Marks: **80 Marks**

Continuous Comprehensive Evaluation (CCE): **20 Marks**

Semester End Exam (SEE): **80 Marks**

Internal Assessment:

Internal Test of 15 Marks and Assignment of 15 Marks

Continuous Comprehensive Evaluation(CCE)

Semester End
Exam (SEE)

Pattern -FOUR Questions (A, B, C, D) from each Unit

Question - A & B: (Compulsory) Very short answer type (01 each) $04 \times 5 = 20$ Marks

Question - C: Short answer type question $05 \times 5 = 25$ Marks

Question -D: Long answer type question $07 \times 5 = 35$ Marks

Total = **80 Marks**

Chairperson /H.O.D

Subject Expert

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Student

GOVT. V.Y.T.PG AUTONOMOUS COLLEGE DURG
FOUR YEAR UNDERGRADUATE PROGRAM
DEPARTMENT OF GEOLOGY
COURSE CURRICULUM 2025-26
Lab Course

PART A: INTRODUCTION			
Program: B.Sc.		Class:	Semester - VI
		Session: 2025-2026	
1	Course Code	BGLL-601	
2	Course Title	ECONOMIC GEOLOGY LABCOURSE	
3	Course Type	Practical	
4	Course Learning Outcome (CLO)	On completion of Course, the students will be able 1. Identify ore forming minerals in hand specimen. 2. Identify nonmetallic minerals of economic importance in hand specimen. 3. Demarcate ore deposits and economic mineral deposits in Outline map of India. 4. Demarcate coal fields in outline map of India. 5. Demarcate petroleum fields in outline map of India. 6. Demarcate radioactive mineral deposits in outline map of India.	
5	Credit Value	1Credit	1 credit =15 Hours – Learning and Observation
6	Total Marks	Maximum Marks : 50	Minimum Passing Marks: 20

PART B: CONTENT OF THE COURSE	
S.No.	List of Experiments
1	Study of important metallic and nonmetallic minerals on the basis of physical properties.
2	Distribution of important metallic deposits within outline map of India.
3	Plotting of various nonmetallic mineral deposits on the outline map of India.
4	Plotting of various coal fields and petroleum field on the outline map of India.
5	Plotting of various radioactive mineral deposits on the outline map of India.

PART C - LEARNING RESOURCES	
Text Books, Reference Books, Other Resources	
TEXT BOOKS Recommended: प्रायोगिक भूविज्ञान भाग-3- गुप्ता, पुनवटकर Economic mineral deposits of India- Umeshwar Prasad. Ore-deposit of India- Gokhale & Rao Online Resources: (e- Resources/ e- Books/ e- Learning Portals) https://egyankosh.ac.in	
PART D: ASSESSMENT AND EVALUATION	
Suggested Continuous Evaluation Methods: Maximum Marks: 50 Marks (Will include Internal assessment, Lab records and End Semester Viva/Voce and performance)	
Semester End Exam (SEE)	Laboratory performance: As per Dept. (LOCF)

Chairperson /H.O.D

Subject Expert

Subject Expert

Subject Expert

Senior Professor of Science Faculty

Departmental members

Alumnus

Student

Four Year Undergraduate Program
Semester VI
Session 2025-26

DSE-I Applied Geology



Chairperson /H.O.D



Subject Expert



Subject Expert

Subject Expert



Senior Professor of Science Faculty



Departmental members

Alumnus

Student

GOVT. V.Y.T.PG AUTONOMOUS COLLEGE DURG
FOUR YEAR UNDERGRADUATE PROGRAM
DEPARTMENT OF GEOLOGY
COURSE CURRICULUM 2025-26

PART A: INTRODUCTION			
	Program: B.Sc.	Class: Semester - VI	Session: 2025-2026
1	Course Code	BGL-602	
2	Course Title	APPLIED GEOLOGY	
3	Course Type	DSE -I	
4	Course Learning Outcome (CLO)	This Course will enable the students 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.	
5	Credit Value	3 Credits	1 credit =15 Hours – Learning and Observation
6	Total Marks	Maximum Marks : 100	Minimum Passing Marks: 40
PART B: CONTENT OF THE COURSE			
Total no. of Teaching/ Learning Periods = 45 Periods (45 Hours)			
Unit	Topics (COURSE CONTENTS)		No. of Periods
I	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.		9
II	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.		9
III	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.		9
IV	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.		9
V	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.		9

Chairperson /H.O.D

Subject Expert

Subject Expert

Subject Expert

Senior Professor of Science Faculty

Departmental members

Alumnus

Student

PART C - LEARNING RESOURCES**Text Books, Reference Books, Other Resources****Text Books Recommended:**

- (1) भौमजल विज्ञान- एल.के. रिछारिया
- (2) आर्थिक एवं व्यावहारिकभूविज्ञान-आर.पी. मांजरेकर
- (3) प्रारंभिक खनिकी-बी.के. सिंह
- (4) प्रायोगिक भूविज्ञान भाग-3-गुप्ता, पुनवटकर एवं रघुवंशी
- (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/>

PART D: ASSESSMENT AND EVALUATION**Suggested Continuous Evaluation Methods:**

Maximum Marks: 80Marks

Continuous Comprehensive Evaluation (CCE): 20Marks

Semester End Exam (SEE): 80Marks

Internal Assessment: Continuous Comprehensive Evaluation(CCE)	Internal Test of 15 Marks and Assignment of 15 Marks
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Semester End Exam (SEE)	Pattern -FOUR Questions (A, B, C, D)from each Unit	
	Question - A & B: (Compulsory) Very short answer type (01 each)	04 x 5 = 20 Marks
	Question - C: Short answer type question	05 x 5 = 25 Marks
	Question -D: Long answer type question	07 x 5 = 35 Marks
	Total = 80Marks	

Chairperson /H.O.D

Subject Expert

Subject Expert

Subject Expert

Senior Professor of Science Faculty

Departmental members

Alumnus

Student

GOVT. V.Y.T.PG AUTONOMOUS COLLEGE DURG
FOUR YEAR UNDERGRADUATE PROGRAM
DEPARTMENT OF GEOLOGY
COURSE CURRICULUM 2025-26
Lab Course

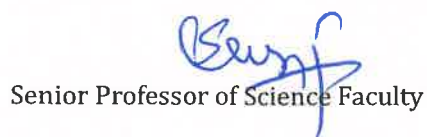
PART A: INTRODUCTION			
	Program: B.Sc.	Class:	Semester - VI Session:2025-2026
1	Course Code	BGLL-602	
2	Course Title	APPLIED GEOLOGY	
3	Course Type	Practical	
4	Course Learning Outcome (CLO)	On completion of Course, the students will be able 1. Demarcate the seismic zones in outline map of India. 2. 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.	
5	Credit Value	1Credit	1 credit =15 Hours – Learning and Observation
6	Total Marks	Maximum Marks : 50	Minimum Passing Marks: 20
PART B: CONTENT OF THE COURSE			
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.		
6	Calculation of hydraulic conductivity, porosity and permeability.		

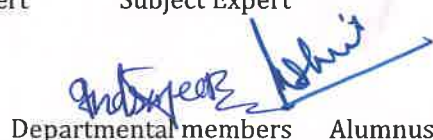

 Chairperson /H.O.D


 Subject Expert


 Subject Expert

Subject Expert


 Senior Professor of Science Faculty


 Departmental members

Alumnus

Student

PART C - LEARNING RESOURCES

Text Books, Reference Books, Other Resources

Text Books Recommended:

- (1) भौमजल विज्ञान- एल.के. रिछारिया
- (2) आर्थिक एवं व्यावहारिकभूविज्ञान-आर.पी. मांजरेकर
- (3) प्रारंभिक खनिकी-बी.के. सिंह
- (4) प्रायोगिक भूविज्ञान भाग-3-गुप्ता, पुनवटकर एवं रघुवंशी
- (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/>

PART D: ASSESSMENT AND EVALUATION

Suggested Continuous Evaluation Methods:

Maximum Marks:

50 Marks

(Will include Internal assessment, Lab records and End Semester Viva/Voce and performance)

Semester End
Exam (SEE)

Laboratory performance: As per Dept. (LOCF)

Chairperson /H.O.D

Subject Expert

Subject Expert

Subject Expert

Senior Professor of Science Faculty

Departmental members

Alumnus

Student

Four Year Undergraduate Program
Semester VI
Session 2025-26

DSE-II Photogeology And Remote Sensing

GOVT. V.Y.T.PG AUTONOMOUS COLLEGE DURG
FOUR YEAR UNDERGRADUATE PROGRAM
DEPARTMENT OF GEOLOGY
COURSE CURRICULUM 2025-26

PART A: INTRODUCTION			
Program: B.Sc.		Class: Semester - VI	Session: 2025-2026
1	Course Code	BGL-603	
2	Course Title	PHOTO GEOLOGY AND REMOTE SENSING	
3	Course Type	DSE -II	
4	Course Learning Outcome (CLO)	This Course will enable the students to: 1. Explain basic principles of photogeology and aerial photography. 2. Understand basic concepts of electromagnetic radiation, its interaction with the earth's surface and atmosphere. 3. Understand resolution properties to interpret, process and evaluate remotely sensed images. 4. Explain about platforms and sensors in Remote Sensing 5. Interpret geological features on aerial photographs.	
5	Credit Value	3Credits	1 credit =15 Hours – Learning and Observation
6	Total Marks	Maximum Marks : 100	Minimum Passing Marks: 40
PART B: CONTENT OF THE COURSE			
Total no. of Teaching/ Learning Periods = 45 Periods (45 Hours)			
Unit	Topics (COURSE CONTENTS)		No. of Periods
I	Types and geometry of aerial photograph, tilt and relief distortion. Elements of photogrammetry, stereoscopy, stereovision, flight planning. Recognition of photo-elements and terrain elements like tone, texture, pattern, shape, size.		9
II	Photo-interpretation of structural and landform elements, tectonic features, features of glacial, fluvial, coastal, aeolian and denudation landforms. Electromagnetic energy, electromagnetic spectrum, image characteristics.		9
III	Space missions, Indian Remote Sensing Satellites. Remote Sensing: data source, platforms and sensors. Acquisition of remote sensing data. Remote Sensing data products, geometric and radiometric corrections, thermal and microwave remote sensing. Digital Image Processing G.P.S. , Google Earth images		9
IV	Remote Sensing techniques in Geosciences: Visual Interpretation of satellite images. Techniques of image interpretation using spectral, spatial and temporal information. Signature of the natural objects..		9
V	Interpretation of lithology: rock types, discrimination of igneous, sedimentary and metamorphic terrain Application of Remote Sensing techniques in Geology		9

Chairperson /H.O.D

Subject Expert

Subject Expert

Subject Expert

Senior Professor of Science Faculty

Departmental members

Alumnus

Student

PART C - LEARNING RESOURCES**Text Books, Reference Books, Other Resources****Text Books Recommended:**

Drury, S.A., 1987: Image interpretation in Geology. Allen and Unwin.

Lillesand, T.M. and Kieffer, R.W., 1987: Remote Sensing and Image Interpretation. John Wiley.

Pandey, S.N., 1987: Principles and Applications of Photogeology. Wiley Eastern. New Delhi.

Gupta, R.P., 1990: Remote Sensing Geology. Springer Verlag

Reference Books:

Miller, V.C., 1961: Photogeology. McGraw Hill.

Sabbins, F.F., 1985: Remote Sensing- Principles and Applications. Freeman

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

<https://natural-resources.canada.ca/maps-tools-and-publications/satellite-imagery-elevation-data-and-air-photos/tutorial-fundamentals-remote-sensing/9309>

PART D: ASSESSMENT AND EVALUATION**Suggested Continuous Evaluation Methods:**

Maximum Marks: 80 Marks

Continuous Comprehensive Evaluation (CCE): 20 Marks

Semester End Exam (SEE): 80 Marks

Internal Assessment:

Continuous Comprehensive Evaluation(CCE)

Internal Test of 15 Marks and Assignment of 15 Marks

Semester End Exam (SEE)**Pattern -FOUR Questions (A, B, C, D)from each Unit**

Question - A & B: (Compulsory) Very short answer type (01 each) 04 x 5 = 20 Marks

Question - C: Short answer type question 05 x 5 = 25 Marks

Question -D: Long answer type question 07 x 5 = 35 Marks

Total = 80 Marks

Chairperson /H.O.D

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Senior Professor of Science Faculty

Departmental members

Alumnus

Student

GOVT. V.Y.T.PG AUTONOMOUS COLLEGE DURG

FOUR YEAR UNDERGRADUATE PROGRAM

DEPARTMENT OF GEOLOGY

COURSE CURRICULUM 2025-26

Lab Course

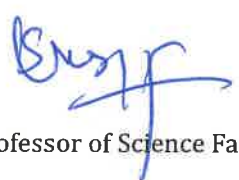
PART A: INTRODUCTION			
Program: B.Sc.		Class: Semester - VI	Session:2025-2026
1	Course Code	BGLL603	
2	Course Title	Photogeology and Remote sensing Labcourse	
3	Course Type	Practical	
4	Course Learning Outcome (CLO)	This Course will enable the students to: 1. Identify terrain elements present on aerial photographs 2. Identify terrain elements present on satellite imageries 3. Visually interpret satellite imageries. 4. Apply the principles of remote sensing for solving various geological problems	
5	Credit Value	1Credit	1 credit =15 Hours – Learning and Observation
6	Total Marks	Maximum Marks : 50	Minimum Passing Marks: 20
PART B: CONTENT OF THE COURSE			
S.No.	List of Experiments		
1	Study of aerial photographs using pocket and mirror stereoscope.		
2	Study of terrain elements present on aerial photographs and satellite imageries		
3	Visual interpretation of satellite imageries.		
4	Use of G.P.S.		
5	Using "Google Earth Pro, Practical exercises related to • Marking location • Marking polygon • Marking linear feature • Saving .kml and .kmz file		


Chairperson /H.O.D


Subject Expert


Subject Expert

Subject Expert


Senior Professor of Science Faculty


Departmental members

Alumnus

Student

PART C - LEARNING RESOURCES

Text Books, Reference Books, Other Resources

Text Books Recommended:

Drury, S.A., 1987: Image interpretation in Geology. Allen and Unwin.

Lillesand, T.M. and Kieffer, R.W., 1987: Remote Sensing and Image Interpretation. John Wiley.

Pandey, S.N., 1987: Principles and Applications of Photogeology. Wiley Eastern. New Delhi.

Gupta, R.P., 1990: Remote Sensing Geology. Springer Verlag

Reference Books:

Miller, V.C., 1961: Photogeology. McGraw Hill.

Sabbins, F.F., 1985: Remote Sensing- Principles and Applications. Freeman

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

<https://natural-resources.canada.ca/maps-tools-and-publications/satellite-imagery-elevation-data-and-air-photos/tutorial-fundamentals-remote-sensing/9309>

PART D: ASSESSMENT AND EVALUATION

Suggested Continuous Evaluation Methods:

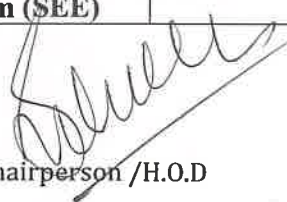
Maximum Marks:

25 Marks

(Will include Internal assessment, Lab records and End Semester Viva/Voce and performance)

Semester End
Exam (SEE)

Laboratory performance: As per Dept. (LOCF)


Chairperson /H.O.D


Subject Expert


Subject Expert

Subject Expert


Senior Professor of Science Faculty


Departmental members

Alumnus

Student