

(Abstract)

Five Year Integrated Master's Programme (FYIMP) in University Teaching Departments/ Schools - Foundation Courses offered by the Dept of Geography for FYIMP - Modified syllabus approved and implemented w. e. f. 2024-'25 Academic Year - Orders Issued

ACADEMIC C SECTION

ACAD C/ACAD C3/12564/2023

Dated: 30.12.2024

Read:-1. U.O of even number dated 23/09/2024

2. Letter No KU-GEO/CCSS-EXAM/66/2015 dated 23/10/2024

3. Letter number: ACAD C/ACAD C3/12564/2023 dated 31/10/2024

4. Email dated 11/11/2024, from the Dean, Faculty of Science

5. Email dated 26/11/2024 from the Head, Dept of Geography of the University

6. The Orders of the Vice Chancellor dated 19/12/2024

ORDER

1. As per paper read (1) above, Foundation Courses offered by various Teaching Departments/ Schools (other than the six Depts offering FYIMP) for FYIMP were approved and Implemented w. e. f. the academic year 2024-'25.

2. Meanwhile, as per the paper read (2) above, the Head, Dept of Geography requested to re-arrange the already approved MDC offered for FYIMP by the Dept., as detailed below.

MDC 1 : KU1MDCGEO101 - Geography of India

MDC 2 : KU2MDCGEO102 - Disaster Management

MDC 3 : KU3MDCGEO103 - Kerala Studies

3. While considering the request from the Head, Dept of Geography, Registrar ordered to direct the Head to modify the Course Code of the Foundation Course as 13 digits to bring uniformity in the Syllabi of FYIMP courses and to make necessary correction in the Mark distribution of each Course as stipulated in the Kannur University FYIMP Regulations implemented w.e.f.2024 admission. The Head, Dept of Geography was informed accordingly, vide paper read as (3) above.

4. Meanwhile, Remarks from the Dean, Faculty of Science was also sought on the modified Syllabus submitted by the Head, Dept of Geography and the Remarks received from the Dean as per paper read (4) above was also forwarded to the Head, Dept of Geography, for incorporating the suggestions in the modified Syllabus.

5. As per paper read (5) above, the Head, Dept of Geography forwarded the corrected Syllabus of Foundation Courses, offered for FYIMP Programmes, for approval.

6. The Vice Chancellor, after considering the matter in detail, and exercising the powers of the Academic Council conferred under Section 11(1) Chapter III of Kannur University Act, 1996 and all other enabling provisions read along with, **approved the modified Syllabus of the Foundation Courses offered by the Dept of Geography of the University for FYIMP Programmes, w.e.f. 2024 admissions, subject to reporting to the Academic Council.**

7. U.O read as per paper read (1) above stands modified to this extent.

8. Modified Syllabus of Foundation Courses for FYIMP Programmes offered by the Dept of Geography is appended with this U.O and uploaded in the University Website (www.kannuruniversity.ac.in).

Orders are issued accordingly.

Sd/-

ANIL CHANDRAN R
DEPUTY REGISTRAR (ACADEMIC)
For REGISTRAR

To: 1. Heads of all Teaching Departments
2. Nodal Officer. FYIMP Implementation Committee

Copy To: 1. PS to VC/ PA to R
2. PA to CE (to circulate among the sections concerned under Examination Branch)
3. EP IV/ EXC I (Examinations)
4. JR (Examinations)
5. AR/DR (Academic)
6. Computer Programmer
7. IT Cell (to publish in the official website)
8. SF/DF/FC

Forwarded / By Order


SECTION OFFICER

FYIMP



KANNUR UNIVERSITY

DEPARTMENT OF GEOGRAPHY

(GENERAL FOUNDATION COURSES)

SYLLABUS

FIVE YEAR INTEGRATED MASTER'S PROGRAMME

FYIMP 2024

COURSE CODE AND COURSE NAME

Semester	Course Type	Course Code	Course Name	Credits
I	MDC	KU01MDCGEO101	GEOGRAPHY OF INDIA	3
II	MDC	KU02MDCGEO102	DISASTER MANAGEMENT	3
III	MDC	KU03MDCGEO201	KERALA STUDIES	3
III	VAC	KU03VACGEO201	ENVIRONMENT AND SUSTIANABILITY	3
IV	SEC	KU04SECGEO201	FUNDAMENTALS OF REMOTE SENSING (Practical)	3
V	SEC	KU05SECGEO301	INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEM (Practical)	3
VI	SEC	KU06SECGEO302	ENVIRONMENTAL IMPACT & RISK ASSESSMENT (Practical)	3

Programme Specific Outcomes (PSO)

At the end of the PYIMP in Geography at Kannur University, a student would:

PSO 1	Analyse the dimensions of complex biophysical and social patterns in the world, and mold out young geographers with wide and deep knowledge in contemporary issues in geography.
PSO2	Critically examine various concepts, laws, theories, and models in geography and evaluate their significance at the local, regional, and global scales.
PSO3	Master and update the students in the developments in geographic information science and technology, through real-world practical applications.
PSO 4	Equip the learner to collect, analyze, and interpret geographic data and suggest potential solutions in socio-economic-ecological systems at the man-environment interface.
PSO5	Develop proficiency in effective communication of conceptual and practical geographical knowledge to both scientific and public audiences.
PSO6	Work effectively in interdisciplinary and multicultural real-world contexts to combine theory and practice and forge collaborations and partnerships with academia, industry and local communities to contribute enduring solutions to issues at various scales for both humans and other-than-human.

KU01MDCGEO101 :Geography of India

Semester	CourseType	CourseLevel	CourseCode	Credits	TotalHours
I	MDC	100-199	KU01DCGEO 01	3	45

LearningApproach (Hours/Week)			MarksDistribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
3	-	-	50	50	100	2

Course Description:

The course offers a comprehensive exploration of the geographical landscape of India. Through a blend of theoretical concepts, case studies, and practical applications, students will delve into the diverse physical, cultural, and socio-economic aspects that shape the geography of India. Thus, the course enable students in gaining nuanced understanding of the geography of India, and its implications for various aspects of human life and development.

CoursePrerequisite:NIL

Course Outcomes:

CO No.	ExpectedOutcome	Learning Domains
1	Understand a comprehensive idea about physical structure of India	U
2	In-depth knowledge of different resource base of India	An
3	Understand Social-Cultural dynamisms in India	E

FYIMP

*Remember(R),Understand(U),Apply(A), Analyse(An),Evaluate(E),Create (C)

Mapping of Course Outcome to PSOs

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6
CO 1	✓					
CO 2	✓				✓	
CO 3						✓

COURSE CONTENTS

Contents for Classroom Transaction:

M O D U L E	U N I T	DESCRIPTION	HOURS
1	Physical Settings		15
	1	Location and Physiographic Divisions	
	2	Drainage Systems: Himalayan and Peninsular	
	3	Climate: characteristics and classification	
2	Resource Base		10
	1	Soil and Natural Vegetation	
	2	Distribution of Mineral Resources (Iron ore and Bauxite)	
	3	Demographic Dividend (Distribution and Age-Sex Composition)	

	Social Geography		15
3	1	Caste system and its regional structure	
	2	Tribes and their correlates	
	3	Religion and language	
Teacher Specific Module			
<i>Directions</i>			
5	Prepare handmade atlas with following plates:		5
	1. Physiographic divisions of India		
	2. Drainage		
	3. Soil and Vegetation		

Essential Readings:

1. Spate O.H.K. and Learmonth A.T.A., 1967: India and Pakistan: A General and Regional Geography, Methuen.
2. Tirtha, Ranjit 2002: Geography of India, Rawat Publs., Jaipur & New Delhi.
3. Stamp, L. D. (1995). Geography of India, Burma and Ceylon.
4. Deshpande C. D., 1992: India: A Regional Interpretation, ICSSR, New Delhi.
5. Sharma, T.C. (2013) Economic Geography of India. Rawat Publication, Jaipur.
6. Pathak, C. R. 2003: Spatial Structure and Processes of Development in India. Regional Science Assoc., Kolkata.
7. Ahmed A., 1999: Social Geography, Rawat Publications.

Suggested Readings:

1. Husain. (2012). Geography Of India. McGraw-Hill Education (India) Pvt Limited.
2. Khullar, D. R. (n.d.). Geography Textbook. New Saraswati House India Pvt Ltd.
3. Holland, S. T. H., & India, G. S. of. (2023). Sketch Of The Mineral Resources Of India. LEGARE STREET Press.
4. Valdiya, K. S. (2001). Himalaya: Emergence and Evolution. Universities Press.
5. Agarwala, S. N. (1975). India's Population: Some Problems in Perspective Planning: Proceedings. Bloomsbury Academic.

Assessment Rubrics:

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper-1	20
b)	Test Paper-2	

FYIMP

c) Assignment	20
d) Seminar	
e) Book/ArticleReview	
f) Viva-Voce	10
g) FieldReport	
Total	100

KU02MDCGEO102:Disaster Management

Semester	CourseType	CourseLevel	CourseCode	Credits	TotalHours
II	MDC	100-199	KU02MDCGEO102	3	45

LearningApproach (Hours/Week)			MarksDistribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
3	-	-	50	50	100	2

Course Description:

In an era where natural and man-made disasters are increasingly frequent and severe, understanding and managing these crises is crucial. This course provides an in-depth understanding of Disaster Management, equipping students with the knowledge and skills needed to effectively prepare for, respond to, and recover from various types of disasters

CoursePrerequisite:NIL

Course Outcomes:

CO No.	ExpectedOutcome	Learning Domains
1	In depth understanding about the various concepts associated with disasters management.	U
2	Detailed analysis about the different types of disasters in India.	An
3	Evaluating the role of institutional frameworks to mitigate the disasters in the country.	E

***Remember(R), Understand(U), Apply(A), Analyse(An), Evaluate(E), Create (C)**

MappingofCourseOutcomesto PSOs

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6
--	-------	-------	-------	-------	-------	-------

FYIMP

CO 1	✓					
CO 2	✓	✓				
CO 3					✓	✓

COURSE CONTENTS

Contents for Classroom Transaction:

M O D U L E	U N I T	DESCRIPTION	HOURS
		Conceptual Basis	10
1	1	Disasters, Hazards, Risk, Vulnerability- Definition and Classification	
	2	History of Disaster Management	
	3	Disaster Management Cycle	
	4	Community Based Disaster Management	
		Natural and Human Made Disasters	20
2	1	Floods	
	2	Earthquake	
	3	Cyclone	
	4	Industrial and Nuclear	
		Strategies for Disaster Management	10
3	1	Sendai Framework for Disaster Risk Reduction 2015-2030	
	2	Disaster Management Act 2005	
	3	NDMA and Prime Minister’s Ten Point Agenda on DRR	
	4	Kerala State Disaster Management Plan	
		Teacher Specific Module	

4	<i>Directions</i>	
	Field-based case study: Conduct a field survey in a locality recently affected by any of the hazards covered in the syllabus.	5

Essential Readings:

1. Bryant , E.(2004). Natural Hazards. Cambridge University Press, India
2. Wisner, B., Blaikie P et al. (2004). At Risk: Natural Hazards, People’s Vulnerability and Disasters. Routledge Taylor and Francis Group , NY.
3. Coppola, D. (2006). Introduction to international disaster management. Elsevier.
4. Savindra, S. and Jeetendra, S. (2013): Disaster Management. Allahabad, India: Pravalika Publications.
5. Smith, Keith (2013). Environmental Hazards: Assessing risk and reducing disasters
6. Government of India. (2011). Disaster Management in India. Delhi, India: Ministry of Home Affairs.
7. Government of India. (2008). Vulnerability Atlas of India. New Delhi, India: Building Materials & Technology Promotion Council, Ministry of Urban Development, Government of India

Suggested Readings:

1. Modh, S. (2010). Managing Natural Disaster: Hydrological, Marine and Geological Disasters. Delhi, India: Macmillan.
2. Ramkumar, M. (2009). Geological Hazards: Causes, Consequences and Methods of Containment. New Delhi, India: New India Publishing Agency.
3. Stoltman, J.P., et al. (2004). International Perspectives on Natural Disasters. Dordrecht, the Netherlands: Kluwer Academic Publications.

Assessment Rubrics:

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper-1	20
b)	Test Paper-2	
c)	Assignment	20
d)	Seminar	
e)	Book/Article Review	
f)	Viva-Voce	10

FYIMP

g) FieldReport	
Total	100

KU03MDCGEO201:Kerala Studies

Semester	CourseType	CourseLevel	CourseCode	Credits	TotalHours
III	MDC	200-299	KU03MDCGEO201	3	45

LearningApproach (Hours/Week)			MarksDistribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
3	-	-	50	50	100	2

Course Description:

The course attempts to explore the vibrant and diverse culture, history, physiography, economy and society of Kerala, a state renowned for its unique scenic landscapes and progressive social policies. This interdisciplinary course delves into Kerala's rich heritage, spanning from ancient history to contemporary developments. This course encourages critical thinking and engages students in exploring how Kerala's experiences can contribute to broader global discussions on culture, development, and sustainability.

CoursePrerequisite:NIL

Course Outcomes:

CO No.	ExpectedOutcome	Learning Domains
1	Understand the physical setting of Kerala	U
2	Create an awareness about Kerala history and renaissance	U

FYIMP

	movement	
3	Critical Examination of the Kerala Model of Development and its social implications	An
4	Evaluate disaster vulnerability of Kerala	E

***Remember(R),Understand(U),Apply(A), Analyse(An),Evaluate(E),Create (C)**

Mapping of Course Outcomes to PSOs

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6
CO 1	✓				✓	
CO 2	✓					✓
CO 3					✓	
CO 4	✓	✓				

COURSE CONTENTS

Contents for Classroom Transaction:

M O D U L E	U N I T	DESCRIPTION	HOURS
		Physical setting of Kerala	10
1	1	Location; Physiographic setting of Kerala, Geology	
	2	Drainage, Backwaters and Water Resources	
	3	Climate- Monsoon	
	4	Vegetation and Soil	
		Historical Background	10
	1	Pre-modern	

FYIMP

2	2	Colonial Intervention	
	3	Kerala Renaissance	
	4	Nationalist Movement and Formation of Kerala State	

	Demography and Economy		10
3	1	Population composition and dynamics- Migration	
	2	Urbanization trends and problems	
	3	Tourism Industry	
	4	Kerala Model of Development & Panchayat Raj and Peoples planning	
4	Disasters and Sustainability		10
	1	Disasters Vulnerability	
	2	Climate change and adaptation	
	3	Disaster Management in Kerala: Institutional Mechanism, Policy and Plans	
	4	Rebuild Kerala Initiative and implementation of SDG in Kerala	

	TeacherSpecificModule		
5	<i>Directions</i>		
		Field visit Conduct a field visit to any localities in Kerala to study its physiography and cultural practices.	5

Essential Readings:

1. Aboo Ishaque PK, Geography of Kerala The Land, People, Economy and Ecology, Lipi Publications.
2. Chattopadhyay, S. 2017. Geomorphological Field Guide Book on Laterites and

FYIMP

- Backwaters of Kerala (Edited by AmalKar). Indian Institute of Geomorphologists, Allahabad
- Menon, A. S (2019). A Survey of Kerala History. DC Books
 - Tharakan, P. K. M. (2008). When the Kerala model of development is historicised: A chronological perspective. Centre for Socio-Economic & Environmental Studies.

Suggested Readings:

- Menon, A. S. (2010). Legacy of Kerala. DC Books.
- Menon, A. S. (2011). Kerala history and its makers. DC Books.
- Spate O.H.K. and Learmonth A.T.A., 1967: India and Pakistan: A General and Regional Geography, Methuen.
- Tirtha, Ranjit 2002: Geography of India, Rawat Publs., Jaipur & New Delhi.

Assessment Rubrics:

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper-1	20
b)	Test Paper-2	
c)	Assignment	15
d)	Seminar	
e)	Book/Article Review	
f)	Viva-Voce	
g)	Field Report	15
Total		100

KU03VACGEO201: Environment and Sustainability

Semester	CourseType	CourseLevel	CourseCode	Credits	TotalHours
III	VAC	200-299	KU03VACGEO201	3	45

LearningApproach (Hours/Week)			MarksDistribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
3	-	-	50	50	100	2

Course Description:

In the face of global environmental challenges, the course "Environment and Sustainability" offers a comprehensive understanding of the principles and practices necessary for fostering a sustainable future. This value addition course is designed to equip students with the knowledge and skills to address pressing environmental issues and promote sustainable development in various contexts.

This course incorporates lectures, interactive discussions, case studies, and practical projects to provide a well-rounded understanding of environmental and sustainability issues. Students will engage in hands-on activities and real-world problem-solving to develop actionable solutions for sustainable living.

CoursePrerequisite:NIL

Course Outcomes:

CO No.	ExpectedOutcome	Learning Domains
--------	-----------------	------------------

FYIMP

1	Understand the dynamisms of ecosystem and various principles governing it.	U
2	Acquire values and attitudes towards understanding complex environmental- economic-social challenges, and active participation in solving current environmental problems and preventing the future ones.	U
3	Think critically on environmental issues and different solutions.	A

***Remember(R), Understand(U), Apply(A), Analyse(An), Evaluate(E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6
CO 1	✓					
CO 2					✓	
CO 3						✓

COURSE CONTENTS

Contents for Classroom Transaction:

M O D U L E	U N I T	DESCRIPTION	HOURS
1	Ecosystems		10
	1	Definition, structure and function of ecosystem	
	2	Energy flow in an ecosystem (food chains, food webs and ecological succession)	
	3	Case studies of the following ecosystems (Forest ecosystem, Aquatic ecosystems)	

	Natural Resources		15
2	1	Land and Soil	
	2	Natural Vegetation	
	3	Energy resources (renewable and non-renewable resources)	

	Sustainability		15
3	1	Biological diversity and threats to biodiversity (Habitat loss, poaching of wildlife, human-wildlife conflicts, biological invasions)	
	2	Environmental pollution: types, causes, effects and controls	
	3	Sustainable Development: Concept and Components; Measures of Sustainability: SDG	

	Teacher Specific Module		
5	<i>Directions</i>		
		Conduct Field work: <ul style="list-style-type: none"> • Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc. • Visit to a local polluted site-Urban/Rural/Industrial/Agricultural. • Study of simple ecosystems-pond, river, coastal regions etc. 	5

Essential Readings:

1. Odum, E.P., Odum, H.T. & Andrews, J. 1971. Fundamentals of Ecology. Philadelphia: Saunders.
2. World Commission on Environment and Development. 1987. Our Common Future. Oxford University Press.
3. Cunningham W. P. and Cunningham M. A., 2004: Principles of Environmental Science: Inquiry and Applications, Tata Mcgraw Hill, New Delhi.
4. Goudie A., 2001: The Nature of the Environment, Blackwell, Oxford.

5. Miller G. T., 2004: Environmental Science: Working with the Earth, Thomson BrooksCole, Singapore.

SuggestedReadings:

1. Dovers, S., & Hussey, K. (2013). Environment and sustainability: a policy handbook. Federation Press.
2. Adams, B. (2008). Green development: Environment and sustainability in a developing world. Routledge.
3. Chiras, D. D. (2009). Environmental science. Jones & Bartlett Publishers.

AssessmentRubrics:

EvaluationType		Marks
EndSemesterEvaluation		50
Continuous Evaluation		50
a)	TestPaper-1	20
b)	TestPaper-2	
c)	Assignment	20
d)	Seminar	
e)	Book/ArticleReview	
f)	Viva-Voce	10
g)	FieldReport	
Total		100

KU04SECGEO201: Fundamentals of Remote Sensing (Practical)

Semester	CourseType	CourseLevel	CourseCode	Credits	TotalHours
IV	SEC	200-299	KU04SECGEO201	3	90

LearningApproach (Hours/Week)			MarksDistribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
-	6	-	50	50	100	2

Course Description:

The course is designed to introduce students to the fundamental concepts and applications of remotesensing technology. This course emphasizes hands-on experience, providing students with the skillsneeded to acquire, analyze, and interpret remote sensing data. Through practical exercises andprojectsstudents will learn how to apply remote sensing techniques in various fields.

CoursePrerequisite:NIL

Course Outcomes:

CO No.	ExpectedOutcome	Learning Domains
1	To create a basic knowledge on different types of remote sensing, basic principles of remote sensing	U
2	To make the students aware about the significance of	A

FYIMP

	the applications of remote sensing as a tool for monitoring objects and phenomena and suggesting their strategic management.	
3	Examine the recent trends in RS technology and its application in various fields of research.	An

***Remember(R), Understand(U), Apply(A), Analyse(An), Evaluate(E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6
CO 1			✓	✓		
CO 2						✓
CO 3					✓	

COURSE CONTENTS

Contents for Classroom Transaction:

M O D U L E	U N I T	DESCRIPTION	HOURS
1	Introduction to Remote Sensing		15
	1	Definition and Historical Development	
	2	Types of Sensors and Platforms	
	3	India's Space Missions	
2	Photogrammetry		20
	1	Introduction to Aerial Photo and Photogrammetry	
	2	Calculation of photo scale	

	3	Annotation and Interpretation Keys	
	Satellite Remote Sensing		15
3	1	Principles of Remote Sensing and EMR Interaction with Atmosphere and Earth Surface	
	2	Types of satellites and sensors	
	3	Sources of Satellite Images (USGS & Bhuvan) and Resolution	
	Image Processing and Interpretation		30
4	1	Data Pre-processing– Basic Principles of Visual Interpretation- Manual Method	
	2	Procedures in Digital Image Processing- Information Extraction; Image Classification	
	3	Practical exercise of Unsupervised Classification/Supervised Classification	
	Teacher Specific Module		
5	<i>Directions</i>		
		<p>Prepare Practical Record File containing at least 5 exercises from the following:</p> <ol style="list-style-type: none"> 1. Practical 1: Calculation of Scale of Aerial Photograph (Using following methods: Focal Length and Flying Height of the Aircraft, Using Photo Distance and Ground Distance, Using Photo Distance and Map Distance). 2. Practical 2: Orientation of Aerial Photo using available Stereoscope (Mirror or Pocket Stereoscope). 3. Practical 3: Identification, Image Interpretation Key and interpretation of Feature Types in Aerial Photographs using a stereoscope. 4. Practical 4: Downloading various remote sensing data (Bhuvan and Landsat data). Preparation of spectral signatures curves for different Various Feature Types (LU/LC) types (only four: Water body, Vegetation, Open/fallow land and built up). 	5

5. Practical 5: Clip, merge, band stacking / virtual raster.	
6. Practical 6: Satellite Image Classification Using Supervised Methods and Preparation of Land Use/Land Cover Map Using Bhuvan or Landsat Data.	
7. Practical 7: Satellite Image Classification usingunsupervised/supervised classification methods.	

Essential Readings:

1. Elachi, C., & Van Zyl, J. J. (2021). Introduction to the physics and techniques of remote sensing. John Wiley & Sons.
2. James B Campbell and Randolph H W (2011) Introduction to Remote Sensing, Gulford Press, New York.
3. Jenson J R (2004) Remote sensing of the Environment, Pearson Education Pvt Ltd, Delhi.
4. Lillesand T M, Kiefer R W and J W Chipman (2008). Remote sensing and Image Interpretation, John Wiley, New Delhi.
5. Paul Curran P.J.(1985) Principles of Remote Sensing, ELBS Publications.
6. Rees, W. G.(2001), Physical Principles of Remote Sensing, Cambridge University Press.

SuggestedReadings:

1. Campbell J. B., 2007: Introduction to Remote Sensing, Guildford Press
2. Li, Z., Chen, J. and Batsavias, E. (2008) Advances in Photogrammetry, Remote Sensing and Spatial Information Sciences CRC Press, Taylor and Francis, London
3. M. Anji Reddy (2008) Textbook of Remote sensing and Geographical information systems, BS Publications, Hyderabad
4. Basudeb Bhatta (2021) Remote sensing and GIS, Oxford University Press, New Delhi Ian
5. Heywood et.al (2002) An Introduction to Geographical Information System, Pearson Education Private Limited, Delhi.

AssessmentRubrics:

EvaluationType	Marks
EndSemesterEvaluation	50
Continuous Evaluation	50

FYIMP

a)	TestPaper-1	20
b)	TestPaper-2	
c)	Assignment	30
d)	Seminar	
e)	Book/ArticleReview	
f)	Viva-Voce	
g)	FieldReport	
Total		100

KU05SECGEO301 : Introduction to Geographic Information System
(Practical)

Semester	CourseType	CourseLevel	CourseCode	Credits	TotalHours
V	SEC	300-399	KU05SECGEO301	3	90

LearningApproach (Hours/Week)			MarksDistribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
-	6	-	50	50	100	2

Course Description:

Introduction to Geographic Information Systems (GIS) course is designed to equip students with practical skills and theoretical understanding necessary for harnessing the power of GIS technology in geographical analysis and decision-making. GIS is a powerful tool that allows users to visualize, analyze, and interpret spatial data, making it an indispensable tool across various disciplines including geography, environmental science, urban planning, and beyond. Through a combination of lectures and hands-on exercises, students will gain a solid foundation in GIS principles and techniques, enabling them to effectively utilize spatial data to solve complex geographical problems. Whether pursuing further studies or entering the workforce, students will be well-equipped to leverage GIS tools to make informed decisions and solve spatial problems in a variety of professional contexts.

Course Prerequisite: NIL

Course Outcomes:

CO No.	Expected Outcome	Learning Domains
1	Develop basic understanding and hands-on on GIS software.	U
2	Understand GIS Data Structures and GIS Data Analysis.	An
3	To do analysis and application of geographical data in real world projects.	A

**Remember(R), Understand(U), Apply(A), Analyse(An), Evaluate(E), Create (C)*

Mapping of Course Outcomes to PSOs

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6
CO 1	✓		✓			
CO 2				✓		
CO 3					✓	✓

COURSE CONTENTS

Contents for Classroom Transaction:

M O D U L E	U N I T	DESCRIPTION	HOURS
		Introduction to GIS	
1	1	Definition and Components	
	2	Evolution of advanced cartography and GIS	
	3	Terrestrial Data Structure (Coordinates, Datum, Projection)	

	Data Structures		
2	1	GIS Software, Open-source GIS, Web GIS	15
	2	Spatial and Non-spatial data; Raster and Vector Data Structure	
	3	Methods of data input in GIS platform	
	GIS Data Analysis and Data Display		35
3	1	Geo-Referencing	
	2	Vectorization, Data editing, Topological error correction	
	3	Mapping Layout	
	Preparing Thematic Maps		30
4	1	Data collection and sorting	
	2	Data joining	
	3	Thematic Map layout	
	Teacher Specific Module		
5	<i>Directions</i>		
	A project file consisting of 5 exercises on using any GIS Software on abovementioned themes.		5

Essential Readings:

1. Ashish Sarkar (2009) Practical Geography – A systematic approach, Orient Black Swan, Kolkata.
2. Bolstad, P., 2016: GIS Fundamentals: A first text on geographic information systems, Eider Press.
3. Chang, K-T., 2017: Introduction to Geographic Information Systems. McGraw-Hill.
4. Dent, B. D. (1985). Principles of thematic map design. Massachusetts: Addison-Wesley Publishing Co.
5. Heywoods, I., Cornelius, S and Carver, S. 2006: An Introduction to Geographical Information System. Prentice Hall.
6. Konecny, G., 2014: Geoinformation Remote Sensing, Photogrammetry, and Geographic Information Systems, CRP Press.
7. Saha, Pijushkanti (2017) Advanced Practical Cartography, Books and Allied, Kolkata.

Suggested Readings:

1. Gupta K K and Tyagi V C : Working with Map, Survey of India, DST, New Delhi
2. Mishra R P and Ramesh A, : Fundamentals of Cartography, Concept Pub. New Delhi
3. Robinson A H, Elements of Cartography, John Wiley and Sons, New York
4. Sarkar A : Practical Geography: A systematic Approach, Orient Black Swan Pvt. Ltd, New Delhi.

Assessment Rubrics:

Evaluation Type		Marks
EndSemesterEvaluation		50
Continuous Evaluation		50
a)	TestPaper-1	20
b)	TestPaper-2	
c)	Assignment	30
d)	Seminar	
e)	Book/ArticleReview	
f)	Viva-Voce	
g)	FieldReport	
Total		100

KU06SECGEO302:Environmental Impact and Risk Assessment
(Practical)

Semester	CourseType	CourseLevel	CourseCode	Credits	TotalHours
VI	SEC	300-399	KU06SECGEO301	3	90

LearningApproach (Hours/Week)			MarksDistribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
-	6	-	50	50	100	2

Course Description:

The course is designed to equip students with practical skills and methodologies used in evaluating environmental consequences and identifying potential risks to ecosystems and human health. This course combines classroom instruction with extensive practical sessions, including fieldwork, lab exercises, and project work. Students will work on real-life scenarios and case studies, allowing them to apply theoretical knowledge in practical settings.

CoursePrerequisite:NIL

Course Outcomes:

FYIMP

CO No.	Expected Outcome	Learning Domains
1	To gain insights into the concept of environmental impact assessment and its relevance in sustainable development.	U
2	To evaluate methodologies to conduct EIA.	E
3	Conduct EIA of any development project.	A
4	Evolve strategies to ensure development and conservation hand-in-hand.	C

***Remember(R), Understand(U), Apply(A), Analyse(An), Evaluate(E), Create (C)**

Mapping of Course Outcome to PSOs

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6
CO 1	✓	✓				
CO 2			✓	✓		
CO 3				✓		✓
CO 4					✓	✓

COURSE CONTENTS

Contents for Classroom Transaction:

M O D U L E	U N I T	DESCRIPTION	HOURS
		Fundamental Concepts of EIA	15
	1	Definition and Concepts, Origin and History with special reference to India	

FYIMP

1	2	Objectives and Principles	
	3	Types of EIA and Classification of Impacts	
EIA Procedures			30
2	1	EIA Notification (Draft) 2020- Classification of Projects (Practical exercise- Category A and Category B1 and B2 projects)	
	2	Project Screening and Scoping (Practical exercise- prepare a questionnaire and compilation of primary data to study the scope of the project based on public participation)	
	3	Impact Analysis and Public Consultation (Practical exercise- conduct a public hearing for any project and prepare a draft for the process)	
EIA Methodologies and Case Studies			40
3	1	Ad Hoc Method and Checklist Method (Practical Exercise- Mining Project Impact Assessment)	
	2	Matrix methods and Network Method (Identify the impacts due to a industrial project using the matrix or network method)	
	3	Overlays Method (Practical exercise- Prepare a brief EIA report of a River Valley Project using overlay method)	
Teacher Specific Module			
5	<i>Directions</i>		
		Prepare a Practical File: <ol style="list-style-type: none"> a. Classification of projects into Category A and Category B1 and B2 projects b. Prepare the scope of a recent developmental project of Category A c. Identify the impacts of Mining/River Valley Project using checklist method. d. Prepare a brief EIA report of a River Valley Project using overlay method. 	5

Essential Readings:

1. Glasson, J. and Therivel, R., (2013). Introduction to Environmental Impact Assessment. Routledge.
2. MacKinnon, A.J., Duinker, P.N. and Walker, T.R., (2018). The Application of Science in Environmental Impact Assessment. Routledge
3. Mareddy, A.R. (2017). Environmental Impact Assessment Theory and Practices, Butterworth Heinemann.

Suggested Readings:

1. Ministry of Environment, Forest and Climate Change (2020). Draft Environment Impact Assessment Notification, 2020.
http://environmentclearance.nic.in/writereaddata/om/6998FGGHOI_Gaztte_EIA2020_Co mm ents.pdf

Assessment Rubrics:

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper-1	20
b)	Test Paper-2	
c)	Assignment	15
d)	Seminar	15
e)	Book/Article Review	
f)	Viva-Voce	
g)	Field Report	
Total		100

FYIMP