



SWARNANDHRA

COLLEGE OF ENGINEERING & TECHNOLOGY

(AUTONOMOUS)

Accredited by National Board of Accreditation, AICTE, New Delhi, Accredited by NAAC with "A" Grade – 3.32 CGPA, Recognized under 2(f) & 12(B) of UGC Act 1956, Approved by AICTE, New Delhi, Permanent Affiliation to JNTUK, Kakinada, Seetharampuram, W.G.D.T., Narsapur-534280, (Andhra Pradesh)

DEPARTMENT OF CIVIL ENGINEERING

TEACHING PLAN

Course Code	Course Title	Semester	Branch	Contact Periods /Week	Academic Year	Date of Commencement of Semester
20CE6T02	Remote Sensing & Geographic Information System Applications	VI	Civil Engineering	05	2024-25	18-11-2024

COURSE OUTCOMES

1	Describe the basic principles of Remote Sensing and GIS techniques. (K2)
2	Identify familiar with ground, air and satellite based sensor platforms. (K2)
3	Interpret the aerial photographs and satellite imageries. (K3)
4	List and create input spatial data for GIS application. (K3)
5	Recognize the application of RS and GIS in Civil engineering. (K3)

UNIT	Out Comes / Bloom's Level	Topics No.	Topics/Activity	Text Book / Reference	Contact Hour	Delivery Method
I	Describe the basic principles of Remote Sensing and GIS techniques. (K2)	1.1	Introduction. Basic concepts of remote sensing	T1,R1	1	Chalk & Talk, PPT, Tutorial
		1.2	electromagnetic radiation, electromagnetic spectrum,	T1,R1	1	
		1.3	interaction with atmosphere	T1,R1	1	
		1.4	Energy interaction with the earth surfaces characteristics of remote sensing systems.	T1,R1	1	
		1.5	Sensors and platforms: Introduction, types of sensors	T1,R2	1	
		1.6	airborne remote sensing, space borne remote sensing, image data characteristics,	T1,R2	1	
		1.7	digital image data formats-Band Interleaved by Pixel	T1,R1	1	
		1.8	Band Interleaved by Line,	T1,R1	1	
		1.9	Band Sequential	T2,R1	1	
		1.10	IRS	T2,R1	1	
		1.11	LANDSAT	T2,R1	1	



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		1.12	SPOT	T2,R1	1	
				Total		12
II	Identify familiar with ground, air and satellite based sensor platforms. (K2)	2.1	Image analysis: Introduction	T2,R1	1	Chalk & Talk, PPT, Tutorial
		2.2	elements of visual interpretations	T2,R1	1	
		2.3	digital image processing	T2,R2	1	
		2.4	digital image processing	T2,R1	1	
		2.5	image Preprocessing	T2,R2	1	
		2.6	image Preprocessing	T2,R1	1	
		2.7	image classification	T1,R1	1	
		2.8	image classification	T1,R1	1	
		2.9	supervised classification	T1,R1	1	
		2.10	supervised classification	T1,R1	1	
		2.11	unsupervised classification	T1,R1	1	
		2.12	unsupervised classification	T1,R1	1	
				Total		12
III	Interpret the aerial photographs and satellite imageries. (K3)	3.1	Geographic Information System	T2,R1	1	Chalk & Talk, PPT, Tutorial
		3.2	Introduction	T2,R1	1	
		3.3	key components	T1,R2	1	
		3.4	key components	T2,R2	1	
		3.5	application areas of GIS	T1,R2	1	
		3.6	application areas of GIS	T2,R1	1	
		3.7	map projections	T1,R2	1	
		3.8	map projections	T1,R1	1	
		3.9	spatial data input	T1,R1	1	
		3.10	raster data models	T1,R1	1	
		3.11	vector data models	T1,R1	1	
		3.12	vector data models	T1,R1	1	
				Total		12
IV	List and create input spatial data for GIS application. (K3)	4.1	Spatial data analysis	T2,R1	1	Chalk & Talk, PPT, Tutorial
		4.2	Introduction overlay function-vector overlay operations	T2,R1	1	
		4.3	Introduction overlay function-vector overlay operations	T1,R2	1	
		4.4	raster overlay operations	T2,R1	1	
		4.5	arithmetic operators	T1,R2	1	
		4.6	comparison and logical operators	T2,R1	1	
		4.7	conditional Expressions	T1,R1	1	



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		4.8	overlay using a decision table	T1,R1	1	
		4.9	network analysis-optimal path finding	T1,R1	1	
		4.10	network allocation	T1,R1	1	
		4.11	network allocation	T1,R1	1	
		4.12	network tracing	T1,R1	1	
					Total	12
V	Develop irrigation canals and canal network. (K3)	5.1	RS and GIS applications General	T2,R1	1	Chalk & Talk, PPT, Tutorial
		5.2	Introduction, Land cover and land use	T2,R1	1	
		5.3	Land cover and land use	T2,R1	1	
		5.4	agriculture	T1,R2	1	
		5.5	forestry	T1,R1	1	
		5.6	geology	T2,R1	1	
		5.7	Geomorphology	T2,R1	1	
		5.8	urban applications	T1,R2	1	
		5.9	Application to Hydrology and Water Resources	T1,R2	1	
		5.10	Flood zoning and mapping	T1,R2	1	
		5.11	groundwater Prospects and potential recharge zones	T1,R2	1	
		5.12	watershed management	T1,R2	1	
					Total	12
CUMULATIVE PROPOSED PERIODS					60	
Text Books:						
S.No.	AUTHORS, BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION					
1	Dr.Mandar S. 'Remote sensing and GIS', NIRALI Publications,2023					
2	Bhatta B , 'Remote sensing and GIS', Oxford University Press,2021					
3	George Joseph , 'Fundamentals of Remote Sensing' Universities Press, 2013					
Reference Books:						
S.No.	AUTHORS, BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION					
1	Dr.Mandar S. 'Remote sensing and GIS', NIRALI Publications,2023					
2	Bhatta B , 'Remote sensing and GIS', Oxford University Press,2021					
Web Details						
1	https://onlinecourses.nptel.ac.in/noc17_ce15/preview					
2	http://ecoursesonline.iasri.res.in/course/view.php?id=53					

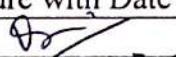
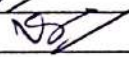


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		Name	Signature with Date
i.	Faculty	Dr.V.GAJENDRA	
ii.	Course Coordinator	Dr.V.GAJENDRA	
iii.	Module Coordinator	Mr.G.V.L.N.MURTHY	
iv.	Programme Coordinator	Mr.G.V.L.N.MURTHY	


Principal