



Yashoda Shikshan Prasarak Mandal's
YASHODA TECHNICAL CAMPUS, SATARA
FACULTY OF ENGINEERING

NH-4, Wadhe Phata, Satara., Tele Fax- 02162-271238/39/40
 Website- <https://engg.yes.edu.in/> Email- principalengg_ytc@yes.edu.in
 Approved by AICTE- New Delhi, Govt. of Maharashtra (DTE, Mumbai)
 Affiliated to DBATU Lonere,

Department of Civil Engineering
Teaching Learning and Assessment Plan

Name of Faculty: Mr. V. B. Kashyap

Semester: VI Class: T.Y. B.Tech. [Civil]

DIV- A, B

Subject: Application of Remote Sensing and Geographic Information System (BTCVOE605H)

Academic Year: 2025-26

Planned Duration: 05-01-2026 to 13-05-2026

Course outcome: After completing the course students will able to

- BTCVOE605H_1** Apply the fundamental principles of remote sensing and electromagnetic radiation to interpret earth observation data.
- BTCVOE605H_2** Analyze different remote sensing systems, satellite data resolution and their applications in civil engineering problems.
- BTCVOE605H_3** Apply visual interpretation techniques and digital image processing methods for analysis of satellite imagery
- BTCVOE605H_4** Analyze GIS data structures, spatial analysis techniques and integration of GIS with remote sensing for urban and water resource. **applications.**
- BTCVOE605H_5** Apply coordinate systems, map projections and geo-referencing techniques in preparation of thematic maps and spatial datasets.

Reference Books:

- A. Burragh P.A. and Mc Donnell R. A., 2016, "Principals of Geo physical Information system", Oxford Publications, 2004.
- B. Kumar A., 2016, "Basics of remote sensing & GIS", Laxmi publications.
- C. Jensen J. R., "Remote sensing of the environment – An earth resources perspective" 2nd edition Pearson Education.
- D. Chandra A. M. and Ghosh S. K., 2015, "Remote sensing and Geographical Information System", Narosa Publishing House.
- E. Reddy M. A., 2001, "Textbook of Remote sensing and Geographical information system", B.S. Publications, Hyderabad.

Mod ule	Lect ure No.	Lesson Plan	Duratio n	Planned Date	Conduction Date	TM	TA	AT	Referen ce Book	Mapping with Outcomes	
		Content Delivery								CO	PO
01	01	Module 1: Remote Sensing: Basic concepts in remote sensing,	1 Hour	05/01/2026		LT	PPT, CB	CA	A,B	BTCVOE605H_1	1,2,3,6,8,12

Vision:

To become centre of excellence by producing Civil engineers having research and development activity, sound technical knowledge, professional skills and social awareness to serve society.

Mission:

- M1: To impart quality technical education through interactive teaching learning method.
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		Content Delivery								CO	PO
	02	information and data collection	1 Hour	07/01/2026				MSE ESE	A,B		PSO1,2 ,3
	03	Remote Sensing process advantages & limitations	1 Hour	08/01/2026					A,B		
	04	necessity	1 Hour	12/01/2026							
	05	importance and use;	1 Hour	14/01/2026					A,B,C		
	06	basic laws of electromagnetic radiation	1 Hour	19/01/2026					A,B		
	07	Atmospheric effects on radiation	1 Hour	21/01/2026							
	08	Interaction of EM energy with matter	1 Hour	22/01/2026							
	09	Assignment / Tutorial No.1 - Module 1	1 Hour	09/03/2026							
02	10	Module 2: Applications of remote sensing:	1 Hour	11/03/2026		LT	CB, PPT	CA MSE ESE	A,B	BTCVOE60 5H_2	1,2,3,6, 8,10,12

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		Content Delivery								CO	PO
	11	Resolution in remote sensing	1 Hour	12/03/2026					A,B		PSO1,2 ,3
	12	Satellite remote sensing	1 Hour	16/03/2026					A,B		
	13	Abbreviations	1 Hour	18/03/2026							
	14	Problems confronting in remote sensing system	1 Hour	23/03/2026					A,B		
	15	Ideal and real remote sensing systems	1 Hour	25/03/2026					A,B,D		
	16	Latitude and longitude	1 Hour	30/03/2026							
	17	Applications of remote sensing in civil engineering.	1 Hour	01/04/2026							
	18	Assignment / Tutorial No.2 - Module 2	1 Hour	06/04/2026							
03	19	Module 3: Visual Interpretation of Satellite Images: Elements of interpretation	1 Hour	08/04/2026		LT	CB, PPT	CA MSE ESE	A,B,C	BTCVOE60 5H_3	1,2,4,6, 8,12

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		Content Delivery								CO	PO
	20	Interpretation keys characteristics of digital satellite image	1 Hour	09/04/2026							PSO1,2,3
	21	image enhancement, filtering	1 Hour	13/04/2026					A,B,C		
	22	classification, integration of GIS and remote sensing	1 Hour	15/04/2026					A,B,C		
	23	urban applications-	1 Hour	16/04/2026					A,B,C		
	24	integration of GIS and remote sensing water resources	1 Hour	20/04/2026							
	25	urban analysis	1 Hour	22/04/2026					A,B,C		
	26	Watershed management.	1 Hour	23/04/2026					A,B,C		
	27	Assignment / Tutorial No.3 - Module 3	1 Hour	27/04/2026							
04	28	Module 4: Geographical Information System & Geo-referencing:	1 Hour	29/04/2026		LT	CB, PPT	CA ESE		BTCVOE60 5H_4	1,2,6,8,9,10,11.

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		Content Delivery								CO	PO
	29	Introduction to Geographic Information System	1 Hour	30/04/2026					B,C		12.
	30	Applications of GIS	1 Hour	04/05/2026					B,C		PSO
	31	such as visibility analysis	1 Hour	06/05/2026							1,2,3
	32	slope analysis,	1 Hour	07/05/2026					B,C		
	33	types of spatial data,	1 Hour	05/05/2026					B,C		
	34	watershed analysis & Preparation of thematic maps.	1 Hour	07/05/2026					B,C		
	35	Limitations of GIS.	1 Hour	11/05/2026							
	36	Assignment / Tutorial No.4 - Module 4	1 Hour	13/05/2026							
05	37	Module 5: Coordinate Systems and Projections: Geographic coordinate system: approximation of the earth	1 Hour	14/05/2026		LT	CB	CA ESE		BTCVOE60 5H_5	1,2,,3,4 ,6,8,9,1

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Module	Lecture No.	Lesson Plan	Duration	Planned Date	Conduction Date	TM	TA	AT	Reference Book	Mapping with Outcomes	
		Content Delivery								CO	PO
	38	datum; map projections: types of map projections,	1 Hour	18/05/2026							0,11,12 PSO1,2 ,3
	39	map projection parameters,	1 Hour	20/05/2026							
	40	Commonly used map projections, projected coordinate systems.	1 Hour	21/05/2026							
	41	Assignment / Tutorial No.5 - Module 5	1 Hour	Extra Lectures							

Note: TM-Teaching Method- Lecture (LT), Laboratory Visit (LV), Industrial Visit (IV) TA-Teaching Aids Chalk Board (CB), Power Point Presentation (PPT), Models (MD) AT-Assessment Tool-Assignments (AS), Examinations (CA, MSE, ESE), Rubrics (RB)

Mode of Assessment

Mode	Assessment Tool	Syllabus	CO Mapped	Marks Weightage	Remark
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CA	Assignment-CA1	All Modules	CO1, CO2, CO3, CO4, CO5	25 M	The maximum weightage shall be of 20 Marks as per University Structure
	PPT Presentation-CA 2	Module 4 & 5	CO4, CO5	25 M	
	Quiz-CA3	Module 2 & 3	CO2, CO3	25 M	
MSE	Written Exam	50% of Syllabus	CO1, CO2, CO3	20M	The maximum weightage shall be of 20 Marks as per University Structure
ESE	Written Exam	On entire syllabus of Application of Remote Sensing and Geographic Information System (BTCVOE605H)	CO1, CO2, CO3, CO4, CO5	60M	The maximum weightage shall be of 60 Marks as per University Structure

Course Coordinator

Academic Coordinator

HOD

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