A T M E
College of Engineering

Course Modules Of The Subject Taught For The Session 2025-26 (Odd Semester)

Course Syllabi with CO's

Faculty Name **: Bharathi B**	Academic Year: 2025-26

Department: Civil Engineering							

Course Code	Course Title	Core/Elective	Prerequisite	Contact Hours			Total Hrs of Pedagogy
				L	T	P	
BCV714A	**Intelligent Transportation System**	**Elective**	**Transportation Engineering**	**3**	**-**	**-**	**40 hours Theory**
Objectives	**Course objectives:** This course will enable students to; ☐ To learn the fundamentals of ITS. ☐ To study the ITS functional areas ☐ To have an overview of ITS implementation in developing countries.						

TOPICS COVERED AS PER SYLLABUS

MODULE-1
Introduction to Intelligent Transportation Systems (ITS) -Definition – Role and Responsibilities – Advanced Traveller Information System – Fleet Oriented ITS Services – Electronic Toll Collection – Critical issues – Security – Safety

MODULE-2
Architecture – ITS Architecture Framework – Hardware Sensors – Vehicle Detection – Techniques – Dynamic Message Sign – GPRS – GPS – Toll Collection

MODULE-3
Video Detection – Virtual Loop - Cameras - ANPR – IR Lighting – Integrated Traffic Management – Control Centre – Junction Management Strategies- ATMS – Advanced Traveler Information Systems (ATIS)- Route Guidance – ssues - Historical – Current – Predictive Guidance – Data Collection – Analysis – Dynamic Traffic Assignment (DTA) – Components –Algorithm.

MODULE-4
Travel Information – Pre Trip and Enroute Methods- Basic ATIS Concepts – Smart Route System – Data Collection – Process – Dissemination to Travelers – Evaluation of Information – Value of Information – Business Opportunities

MODULE-5
Automated Highway Systems - Vehicles in Platoons – Integration of Automated Highway Systems. ITS Programs in the World – Overview of ITS implementations in developed countries, ITS in developing countries.

Suggested Learning Resources

Books

1. Intelligent Transport Systems, Intelligent Transportation Primer, Washington, US, 2001.

2. Henry F.Korth, and Abraham Siberschatz, Data Base System Concepts, McGraw Hill, 1992.

3. Turban E.,"Decision Support and Export Systems Management Support Systems", Maxwell Macmillan, 1998.

4. Sitausu S. Mittra, "Decision Support Systems – Tools and Techniques", John Wiley, New York, 1986.

5. Cycle W.Halsapple and Andrew B.Winston, "Decision Support Systems – Theory and Application", Springer Verlog, New York, 1987

6. ITS Hand Book 2000: Recommendations for World Road Association (PIARC) by Kan Paul Chen, John Miles.

Web links and Video Lectures (e-Resources):
- https://nptel.ac.in/courses/105107210
- https://www.civil.iitb.ac.in/tvm/nptel/591_ITS_1/web/web.html

Course Outcomes	At the end of the course, the student will be able to: • Understand the sensor and communication technologies. • Apply the various ITS methodologies • Define the significance of ITS under Indian conditions

CIE marks for the theory component are **25 marks** and that for the practical component is **25 marks**.

• 25 marks for the theory component are split into **15 marks** for two Internal Assessment Tests (Two Tests, each of 15 Marks with 01-hour duration, are to be conducted) and **10 marks** for other assessment methods mentioned in 22OB4.2. The first test at the end of 40-50% coverage of the syllabus and the second test after covering 85-90% of the syllabus.

• The student has to secure 40% of 25 marks to qualify in the CIE of the theory component of IPCC.
The laboratory test **(duration 02/03 hours)** after completion of all the experiments shall be conducted for 50 marks and scaled down to **10 marks.**

• Scaled-down marks of write-up evaluations and tests added will be CIE marks for the laboratory component of IPCC for **25 marks**.

Correlation of Course Outcomes (CO's) and Program Outcomes (PO's)

Subject Code:	BCV714A	Title: Intelligent Transportation System					Faculty Name:		Bharathi B				
List of Course Outcomes	Program Outcomes													
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO-1	3	-	1	-	-	-	-	-	-	-	-	1		
CO-2	1	1	-	1	-	-	-	-	-	-	-	1		
CO-3	2	-	-	-	-	-	-	-	-	-	-	1		
CO-4	2	1	-	-	-	-	-	-	-	-	2	1		
CO-5	1											1		

Note: 3 = Strong Contribution   2 = Average Contribution   1 = Weak Contribution   - = No Contribution