Kolhapur Institute of Technology's

COLLEGE OF ENGINEERING (AUTONOMOUS)

Gokul Shirgaon, Kolhapur

KOLHAPUR INSTITUTE OF TECHNOLOGY'S COLLEGE OF ENGINEERING (AUTONOMOUS), KOLHAPUR

Curriculum Structure

For

B. Tech. (Hons.) in Civil Engineering with Specialization in Strategic Civil Infrastructure

Academic Year 2022-2023

Submitted to BoS for Approval: ***03.06.2022***

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Teaching and Evaluation scheme for **B. Tech. (Hons.) in Civil Engineering with Specialization in Strategic Civil Infrastructure**

Sr. No	Curriculum Component	Course Code	Course	Teaching Scheme			Credit	Evaluation Scheme		
				L	T	P		Component	Marks	
									Max	Min for Passing
1	-	UCVH 0301	Traffic Engineering and Management	3	1	0	4	ESE	100	40
2	-	UCVH 0401	Pavement Analysis, Evaluation & Design	3	1	0	4	ESE	100	40
3	-	UCVH 0501	Urban Transportation Systems Planning	3	1	0	4	ESE	100	40
4	-	UCVH 0601	Aviation Infrastructure and Facility Planning	3	1	0	4	ESE	100	40
5	-	UCVH 0701	Mini Project	0	0	4	2	ESE	100	40
			Total	**12**	**4**	**4**	**18**	**Total Marks**		**500**

Title of the Course:	**Traffic Engineering and Management**	**L**	**T**	**P**	**Credit**
Course Code:	**UCVH0301**	**3**	**1**	**-**	**4**

Course Pre-Requisite:

Students shall have the knowledge of:
Basic knowledge of Transportation Engineering

Course Description:

The objective of this course is to expose the students to the concepts of Traffic regulations ,driver, vehicle ,flow and general controls traffic devices control ,types of parking design principles ,parking restrictions, one way streets, zebra crossing, railings, pedestrian signal foot over bridges ,traffic management authorities, road lighting. Students will be exposed to various case studies related with Traffic developments

Course Learning Objectives:

1. To understand fundamental knowledge of traffic Engineering, scope and its importance
2. Describe basic techniques for collecting and analyzing traffic data, diagnosing problems, designing appropriate remedial treatment and assessing its effectiveness.
3. Apply probabilistic and queuing theory techniques for the analysis of traffic flow situations and emphasis the interaction of flow efficiency and traffic safety
4. Understand and analyse traffic issues including safety, planning ,design, operation and control
5. Apply intelligent transport system and its applications in the present traffic scenario.

Course Outcomes:

CO	**After the completion of the course the student should be able to**	**Bloom's Cognitive**	
		Level	**Descriptor**
CO1	Understand the human factors and vehicular factors in traffic engineering design.	2	Understanding
CO2	Conduct different types of traffic surveys and analysis of collected data using statistical concepts.	2	Demonstrate
CO3	Analyse an appropriate traffic flow theory and to comprehend the capacity & signalized intersection analysis.	4	Analysing
CO4	Understand the road accidents, Traffic and Environment hazards	2	Understanding

CO-PO Mapping:

CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	2	-	-	-	-	2	3	2	2	2	-	2
CO2	2	2	-	3	2	3	-	-	3	3	-	3

CO3	-	3	2	-	1	3	2	-	-	-	-	-
CO4	2	3	-	3	-	3	3	3	-	-	-	-

CO-PSO Mapping:

CO	PSO1	PSO2	PSO3
CO1	-	-	2
CO2	-	3	-
CO3	-	-	-
CO4	-	3	-

Assessments :

Teacher Assessment:

- **ESE:** Assessment is based on the End Semester Examination on 100% course content

Assessment	Marks
ESE	100

Course Contents:

Unit 1: Traffic Planning and Characteristics: Road Characteristics- Road user characteristics, PIEV theory, Vehicle Performance characteristics, Urban Traffic problems in India, Objectives and scope of traffic engineering.	**06Hrs.**
Unit 2: Traffic Surveys: Traffic Surveys- Speed, journey time and delay surveys, Vehicles Volume Survey including non-motorized transports, Methods and interpretation, Origin Destination Survey, Methods and presentation, Parking Survey, Accident analyses	**06 Hrs.**
Unit 3: Traffic Design and Visual Aids: Intersection Design- channelization, Rotary intersection design, Signal design, Coordination of signals, Grade separation, Traffic signs including VMS and road markings, Significant roles of traffic control personnel, Networking pedestrian facilities & cycle tracks.	**06 Hrs.**
Unit 4: Traffic Safety and Environment: Road accidents, Causes, effect, prevention, and cost, Street lighting, Traffic and environment hazards, Air and Noise Pollution, causes, abatement measures, Promotion and integration of public transportation, Promotion of non-motorized transport	**08 Hrs.**

Unit 5: Traffic Management: Area Traffic Management System, Traffic System Management (TSM) with IRC standards, Traffic Regulatory Measures, Travel Demand Management (TDM), Direct and indirect methods, Congestion and parking pricing, All segregation methods- Coordination among different agencies, Intelligent Transport System for traffic management, enforcement and education.	**08 Hrs.**
Unit 6: ITS: Introduction to Intelligent Transport System- Application of ITS to Traffic Management System- Public Transportation Management System – ITS Case studies	**06 Hrs.**

Recommended Textbooks:

1. Kadiyali.L.R. "Traffic Engineering and Transport Planning", Khanna Publishers, Delhi, 2013
2. S K Khanna and CEG Justo and A Veeraragavan, "Highway Engineering", Nem Chand and Bros.
3. Indian Roads Congress (IRC) Specifications: Guidelines and Special Publications on Traffic Planning and
4. Management.

   Salter. R.I and Hounsell N.B, "Highway Traffic Analysis and design", Macmillan Press Ltd.1996.

References Books:

1. Fred L. Mannering, Scott S. Washburn and Walter P.Kilareski, Principles of Highway Engineering and Traffic
   Analysis, Wiley India Pvt. Ltd., New Delhi, 2011
2. Garber and Hoel, "Principles of Traffic and Highway Engineering", CENGAGE Learning, New Delhi, 2010
3. SP:43-1994, IRC Specification, "Guidelines on Low-cost Traffic Management Techniques" for Urban Areas, 1994
4. John E Tyworth, "Traffic Management Planning, Operations and control", Addison Wesly Publishing Company,
   1996

   Hobbs.F.D. "Traffic Planning and Engineering", University of Brimingham, Peragamon Press Ltd, 2005

Unit wise Measurable students Learning Outcomes:

After the completion of the course the student will be able to

1. Understand the human factors and vehicular factors in traffic engineering design.
2. Conduct different types of traffic surveys
3. Analysis of collected data using statistical concepts.
4. Use an appropriate traffic flow theory
5. To comprehend the capacity & signalized intersection analysis.
6. Understand the basic knowledge of Intelligent Transportation System.
7. Understand the importance of Traffic System Management

Title of the Course:	**Pavement Analysis, Evaluation & Design**	**L**	**T**	**P**	**Credit**
Course Code:	**UCVH0401**	**3**	**1**	**-**	**4**

Course Pre-Requisite:

Students shall have the knowledge of:
Basic knowledge of Transportation Engineering, Road Pavement

Course Description:

The course cover Desirable characteristics of pavement, Functions of Subgrade, Design life of pavement, Flexible pavement failures, Rigid pavement failures,ESWL Concept, Remedial measures in pavement. It also deals with types of joins used in pavement.

Course Learning Objectives:

1. Gain knowledge about the process of collecting data required for design, factors affecting pavement design and maintenance of pavement
2. Expose students to different materials which are used in pavement construction, impart knowledge about the engineering properties required.
3. To train students to perform various types of bituminous mix designs as per the guidelines (MORTH)
4. Expose students to construction practice and quality control aspects of embankment, flexible and rigid pavement as per the required specifications (MORTH).
5. To introduce students to possible improvisation in various layers of pavement to increase the structural strength by the use of non basic materials.

Course Outcomes:

CO	After the completion of the course the student should be able to	Bloom's Cognitive	
		Level	Descriptor
CO1	Gain knowledge about the process of collecting data required for design	1	knowledge
CO2	Understand different materials which are used in pavement construction	2	Understanding
CO3	perform various types of bituminous mix designs	3	Applying
CO4	Illustrate different construction practice and quality control aspects of embankment	2	Understanding
CO5	Identify possible improvisation in various layers of pavement	3	Applying

CO-PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2	-	3	-	-	3	3	2	2	2	-
CO2	2	2	-	3	3	2	-	5	-	-	-	-
CO3	3	3		3		3	-	2	-	3	3	2
CO4	4	2	2	-	3	2	3	-	-	-	-	2
CO5	5	1	2	-	2	-	-	3	-	-	-	-

CO-PSO Mapping:

CO	PSO1	PSO2	PSO3
CO1	-	-	-
CO2	-	3	-
CO3	-	-	-
CO4	3	3	-
CO5	-	-	4

Assessments :

Teacher Assessment:

- **ESE:** Assessment is based on the End Semester Examination on 100% course content

Assessment	Marks
ESE	100

Course Contents:

Unit-1 Pavement Materials: Aggregates- Origin, Classification, Requirements, properties and tests on Road aggregates, Concepts of size and gradation- design gradation, maximum aggregate size,Bitumen and Tar- Origin, Preparation, Properties and Chemical Constitution of bituminous road binders, Requirements.	**06Hrs.**
Unit 2: Fundamentals of Design of Pavements Design life – Traffic factors – climatic factors – Road geometry – Subgrade strength and drainage, Stresses and deflections, Boussinesqs theory – principle, Assumptions – Limitations, contact pressure – ESWL concept – Determination of ESWL by equivalent deflection criteria	**06 Hrs.**

Unit 3: Desirable characteristics of pavements: types and components, Difference between Highway pavement and Air field pavement – Design strategies of variables – Functions of sub-grade, sub base – Base course – surface course – comparison between Rigid and flexible pavement.	**06 Hrs.**
Unit -4 Flexible Pavements: Specifications of materials, Construction method and field control checks for various types of flexible pavement layers.	**06 Hrs.**
Unit-5 Cement Concrete Pavements: Specifications and method of cement concrete pavement construction (PQC, importance of providing DLC as sub base and polythene thin layer between PQC and sub base). Quality control tests, Construction of various types of joints.	**08 Hrs.**
Unit-6 Rigid Pavement Failures: Maintenance and Evaluation: Types of failures, causes, remedial/maintenance measures in rigid pavements, Functional evaluation by Visual inspection and unevenness measurements, wheel load and its repetition, properties of sub grade, properties of concrete. External conditions, joints, Reinforcement, Requirements of joints, Types of joints, Expansion joint, contraction joint, warping joint, construction joint, longitudinal joint, Design of joints.	**08 Hrs.**

Recommended Textbooks:

1. S K Khanna, C E G Justo, and A Veeraragavan, "Highway Engineering", Nem Chand & Brothers
2. L.R.Kadiyali and Dr.N.B.Lal, " Principles and Practices of Highway Engineering", Khanna publishers
3. Yang H. Huang , "Pavement Analysis and Design", University of Kentucky.
4. Highway Engineering- Khanna, S.K., and Justo, C.E.G.: Nem Chand and Bros. Roorkee.
5. Construction Equipment and its Management- Sharma, S.C.:Khanna Publishers.
6. Hot Mix Asphalt Materials, Mixture Design and Construction- Freddy L. Roberts, Kandhal, P.S: University of Texas Austin, Texas. NAPA Education Foundation Lanham, Maryland..

References Books:

1. Yoder & wit zorac, "Principles of pavement design", John Wiley & Sons.
2. SubhaRao, "Principles of Pavement Design".
3. R Srinivasa Kumar, "Pavement Design", University Press.
4. Relevant recent IRC codes
5. RRL, DSIR, 'Bituminous Materials in Road Construction', HMSO Publication.
6. RRL, DSIR, 'Soil Mechanics for Road Engineers', HMSO Publication.
7. Relevant IRC codes and MoRT& H specifications

Web links and Video Lectures:

1. http://nptel.ac.in/courses.php?disciplineID=111
2. http://www.class-central.com/subject/math(MOOCs)
3. http://academicearth.org/

Unit wise Measurable students Learning Outcomes:

After the completion of the course the student will be able to

1. Students will be able to evaluate and assess the suitability of any pavement material to be used in various components of pavement by conducting required tests as per IS,IRC specifications
2. Students will be able to formulate the proportions of different sizes of aggregates to suit gradation criteria for various mixes as per MORTH and also design bituminous mixes.
3. Systematically generate and compile required data's for design of pavement (Highway & Airfield)
4. Analyze stress, strain and deflection by boussinesq's, bur mister's and westergaard's theory.

Title of the Course:	**Urban transportation systems Planning**	**L**	**T**	**P**	**Credit**
Course Code:	**UCVH0501**	**3**	**1**	**-**	**4**

Course Pre-Requisite:

Students shall have the knowledge of:

1. To enable the students to develop the mass transportation systems
2. Engineering knowledge
3. Problem analysis

Course Description:

This course provides the basic concepts and skill sets to undertake urban land use and transportation planning and to analyze the impact of various policies either related to infrastructure development, environmental regulation and urban expansion.

Course Learning Objectives:

1. Understand and apply basic concepts and methods of urban transportation planning.
2. Apprise about the methods of designing, conducting and administering surveys to provide the data required for transportation planning.
3. Understand the process of developing an organized mathematical modelling approach to solve select urban transportation planning problem.
4. Excel in use of various types of models used for travel forecasting, prediction of future travel patterns.

Course Outcomes:

CO	After the completion of the course the student should be able to	Bloom's Cognitive	
		Level	Descriptor
CO1	Define ,Design, conduct and administer surveys to provide the data required for transportation planning	1	Remember
CO2	Supervise the process of data collection about travel behavior and analyze the data for use in transport planning	4	Analysing
CO3	Develop and calibrate modal split, trip generation rates for specific types of land use developments.	6	Creating
CO4	Adopt the steps that are necessary to complete a long-term transportation plan.	6	Creating

CO-PO Mapping:

CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	1	2	-	-	2	1	-	-	-	-	-	1
CO2	1	1	2	3	2	1	-	-	-	-	-	1

CO3	3	3	2	2	3	1	-	-	-	-	-	-
CO4	1	1	2	1	-	1	-	-		-	-	2

CO-PSO Mapping:

CO	PSO1	PSO2	PSO3
CO1	-	-	2
CO2	1	-	-
CO3	2	-	-
CO4	-	-	1

Assessments :

Teacher Assessment:

- **ESE:** Assessment is based on the End Semester Examination on 100% course content

Assessment	Marks
ESE	100

Course Contents:

Unit-1: History and role of Transit: Recent Trends Mass Transportation Characteristics. Demand characteristics, Spatial, Temporal and Behavioural Characteristics of Transportation Demand.	**06 Hrs.**
Unit-2: Urban transport planning: Urbanization, urban class groups, Urban mass transportation systems: urban transit problems, travel demand, types of transit systems, public, private, para-transit transport, mass and rapid transit systems, BRTS and Metro rails, capacity, merits and comparison of systems, coordination, types of coordination.	**08 Hrs.**
Unit 3: Data Collection And Inventories: Collection of data – Organization of surveys and Analysis, Study Area, Zoning, Types and Sources of Data, Road Side Interviews, Home Interview Surveys, Commercial Vehicle Surveys	**06 Hrs.**
Unit 4: Trip Generation: UTPS Approach, Trip Generation Analysis: Zonal Models, Category Analysis, Household Models, Trip Attraction models, Commercial Trip Rates	**06 Hrs.**
Unit -5: Trip Distribution: Trip Distribution by Growth Factor Methods. Problems on above. Gravity Models, Opportunity Models, Time Function Iteration Models.	**06 Hrs.**

Unit-6: Traffic Assignment: Diversion Curves; Basic Elements of Transport Networks, Coding, Route Properties, Path Building Criteria, Skimming Tree, All-or-Nothing Assignment, Capacity Restraint Techniques, Reallocation of Assigned Volumes, Equilibrium Assignment	**08 Hrs.**

1. Recommended Textbooks:

1. Kadiyali. L. R., 'Traffic Engineering and Transportation Planning', Khanna Publishers, New Delhi.
2. Hutchinson, B.G, 'Introduction to Urban System Planning', McGraw Hill.
3. Khisty C.J., 'Transportation Engineering – An Introduction' Prentice Hall.
4. Papacostas, 'Fundamentals of Transportation Planning', Tata McGraw Hill

References Books:

1. Vuchic V.R., Urban Public Transportation System and Technology, Prentice Hall, Inc. Englewood Cliffs, New Jersey, (1981).
2. Agarwal M.K., Urban Transportation in India, INAE, Allied Publishers Ltd., (1996).
3. Grey G.E. & Hoel , L. A., Public Transportation, Prentice Hall, Englewood Cliffs, N.J. (1992).
4. Mayer M and Miller E, 'Urban Transportation Planning: A decision oriented Approach', McGraw Hill.
5. Bruton M.J., 'Introduction to Transportation Planning', Hutchinson of London.
6. Dicky, J.W., 'Metropolitan Transportation Planning', Tata McGraw Hill.

Unit wise Measurable students Learning Outcomes:

After the completion of the course the student will be able to

1. Apply up-to-date information for planning and operation of urban transport.
2. Execute various transportation related surveys.
3. Evaluate relative importance of various modes and their capacities.
4. Solve travel demand forecasting problems.
5. Recommend most appropriate transport modes based on performance evaluation.

Title of the Course:	**Aviation infrastructure and facility Planning**	**L**	**T**	**P**	**Credit**
Course Code:	**UCVH0601**	**3**	**-**	**-**	**3**

Course Pre-Requisite:

Students shall have the knowledge of:
Engineering knowledge, Problem analysis, Interpretation of data

Course Description:

The module introduces the Airport planning issues along with the designing of Runway. The visual aids required from Airport Traffic operating are dealt with. The necessary inputs required for efficiency drainage system has significance in maintenance the airport.

Course Learning Objectives:

1. Understand and apply basic concepts and methods of urban transportation planning.
2. Apprise about the methods of designing, conducting and administering surveys to provide the data required for transportation planning.
3. Understand the process of developing an organized mathematical modelling approach to solve select urban transportation planning problem.
4. Excel in use of various types of models used for travel forecasting, prediction of future travel patterns.

Course Outcomes:

CO	After the completion of the course the student should be able to	Bloom's Cognitive	
		Level	Descriptor
CO1	Describe the different components of airport and aircrafts.	2	Understanding
CO2	Analyse the requirements of an airport layout with respect to international regulations.	3	Analysing
CO3	Explain the airport runway design	2	Understanding
CO4	Design Taxiways & Aprons.	6	creating
CO5	Summarise the concepts of the terminal service facilities.	2	Understanding

CO-PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	-	-	-	-	1	1	-	2	1	-	1
CO2	1	3	2	1	1	1	1		1	1	1	1

CO3	1	1	3	1	-	1	-	-	-	-	-	-
CO4	1	1	3	1	-	1	-	-	-	-	-	1
CO5	1	1	-	-	1	1	-	-	-	1	-	1

CO-PSO Mapping:

CO	PSO1	PSO2	PSO3
CO1	1	2	-
CO2	-	2	-
CO3	-	1	2
CO4	-	1	-
CO5	1	-	2

Assessments :

Assessments :

Teacher Assessment:

- **ESE:** Assessment is based on the End Semester Examination on 100% course content

Assessment	Marks
ESE	100

Course Contents:

Unit 1: Air Transportation Airport terminology, component parts of Aeroplane, Classification and size of airports; Aircraft characteristics. Air traffic control need for ATC, Air traffic control network, Air traffic control aids –enroute aids, landing aids. Airport site location and necessary surveys for site section, airport obstructions.	**08 Hrs.**
Unit 2:Planning Airport master plan –FAA recommendations, Regional Planning, ICAO recommendations, Estimation of future airport traffic needs-layout of Air Port	**06 Hrs.**
Unit 3: Runway orientation windrose diagram, basic runway length, corrections for elevation, temperature and gradient, runway geometric design, runway pavement design introduction.	**08 Hrs.**

Unit -4 :Taxiways and Aprons Loading aprons –holding aprons –Geometric design standards, exit taxiways –optimal location, design, and fillet and separation clearance	**06 Hrs.**
Unit-5: other facilities Lighting, visual airport marking, airport lighting aids.	**06 Hrs.**
Unit-6:Operations and Scheduling Ground transportation facilities; Airport capacity, runway capacity and delays.	**06 Hrs.**

Recommended Textbooks:

1. Khanna S.K., Arora M.G., Jain S.S., "Airport Planning & Design",1st Edition, Nemch and Bros. Roorkee, 2009

2. Robert Horonjeff, Francis Mc Kelvey, William Sproule and Seth Young, "Planning and Design of Airports" 5th Edition, 2010.

References Books:

1. Heronjeff, R, Mc Kelvey, F.X, "Planning & Design of Airports", 2 nd Edition, Mc Graw Hill Book Co, 1994.
2. Norman J. Ashford, Saleh Mumayiz and Paul H. Wright, "Planning, Design and Development of 21st Century Airports", 4th Edition, John Wiley &Sons, 2011.
3. Subramian K.P., "Highway, Railway, Airport and Harbour Engineering", 1st Edition, Scitech Publications Private Limited, 2013.
4. Alexander T. Wells, Ed. D & Seth, B. Young, "Airport Planning and Management', 5th Edition, 2008

Unit wise Measurable students Learning Outcomes:

After the completion of the course the student will be able to

1. Introduced the region planning for an airport.
2. Design the runway length after considering the correction required for basis runway length.
3. Understand the visual aids required for safe landing and takeoff operating of airport.
4. Air traffic control and Airport Lighting.

Title of the Course:	Mini Project	L	T	P	Credit
Course Code:	UCVH0701	-	-	04	02

Course Description:

1. The main aim of this course is to demonstrate the important attributes like critical thinking, creativity, collaborative efforts and communication skills in students.

2. The aim is also to make students aware with the process involved in making product from idea.

Course Outcomes:

COs	After the completion of the course the student should be able to	Bloom's Cognitive	
		Level	Descriptor
CO.1	Identify the community needs	3	Apply
CO.2	Convert the idea in to Product/Process/Service	3	Convert
CO.3	Analyze and Design the physical / Mathematical/ ICT model in order to solve identified problem	4	Analyze
CO.4	Create and work in group	6	Create

CO-PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1	1	-	-	-	-	3	-	-	-	-	-	-
2	-	2	3	2	-	-	-	-	-	-	-	-
3	-	-	-	1	3	-	-	-	-	-	1	-
4	-	-	-	-	-	-	-	-	3	1	-	1

COs	PSO1	PSO2	PSO3	PSO4
CO.1	-	-	-	-
CO.2	-	**3**	-	-
CO.3	-	-	-	-
CO.4	**3**	**3**	---	-
CO.5	-	-	**4**	-

Assessments :

Teacher Assessment:

- One In Semester Examination (ISE) and One End Semester Examination (ESE) having 33% - 67% weights respectively.

Assessment	Weightage (Marks)
ISE	25
ESE(OE)	75

- ISE: Assessment is based on presentation given by student groups after every 2 weeks.

- ESE: Assessment is based on completion of mini project and presentation given by student groups.

Mini projects shall consist of followings (but not limited to):
Minor experimental work of various techno-social issues, computer based analysis and design, structural audit of various civil engineering works, health monitoring of structures, Innovative civil engineering materials, Environmental impact assessment, design of small water supply schemes, irrigation schemes, water harvesting, sewerage system, waste management system, transportation engineering etc. related to civil engineering.
Guidelines:
1 Mini-project is a group activity; each group should be of minimum 2 students and maximum 3 students. 2 Each batch shall consist of 2 to 3 groups. Not more than one batch should be assigned to a single faculty. 3 After interactions with course coordinator and based on comprehensive literature survey/ need analysis, the student shall identify the title and define the aim and objectives of mini-project. 4 Student is expected to detail out methodology, software required, critical issues involved in analysis /design and implementation and submit the proposal within one week of the semester. 5 Use of relevant software is preferred. 6 Completed mini project and documentation in the form of report and is to be submitted before the end of semester assessment. 7 Schedule for Presentation: 1 Synopsis Presentation 2 Presentation given by student groups after every 2 weeks – ISE Assessment 3 Final presentation – ESE Assessment