NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

Department of Civil Engineering

COURSE PLAN – PART I			
Name of the programme and specialization	M.Tech, Transportation Engineering and Management		
Course Title	Transportation Planning		
Course Code	CE604	No. of Credits	4
Course Code of Pre-requisite subject(s)	None		
Session	January 2021	Section (if, applicable)	N.A.
Name of Faculty	Dr Darshana O	Department	Civil Engineering
Official Email	darshana@nitt.edu	Telephone No.	
Name of Course Coordinator(s) (if, applicable)	N.A.		
Official E-mail		Telephone No.	
Course Type (please tick appropriately)	✓ Core course	☐ Elective course	

Syllabus (approved in BoS)

Urban morphology - Urbanization and travel demand – Urban activity systems and travel patterns – Systems approach – Trip based and Activity based approach – Urban Transportation Planning – Goals, Objectives and Constraints - Inventory, Model building, Forecasting and Evaluation - Study area delineation – Zoning - UTP survey

Trip generation models – Trip classification - productions and attractions – Trip rate analysis - Multiple regression models - Category analysis - Trip distribution models – Growth factor models, Gravity model and Opportunity models.

Modal split models – Mode choice behavior – Trip end and trip interchange models- Probabilistic models - Utility functions - Logit models - Two stage model. Traffic assignment – Transportation networks – Minimum Path Algorithms - Assignment methods – All or Nothing assignment and Multi path assignment - Route-choice behavior.

User Equilibrium assignment- System optimum assignment- Incremental assignment-Capacity restraint assignment- Stochastic user equilibrium assignment- Dynamic Assignment

Landuse transportation models – Urban forms and structures - Location models - Accessibility – Landuse models - Lowry derivative models – Micro level Planning-International Practices

COURSE OBJECTIVES
1. To learn the fundamentals of transportation planning 2. To understand the classical methods of urban transportation planning 3. To understand the trip generation and trip distribution concepts 4. To learn the mode and route choice behavior of trip makers 5. To be acquainted with the transportation landuse interaction

MAPPING OF COs with POs

Course Outcomes	Programme Outcomes (PO)
On completion of the course, the students will be able to:	
1. interpret the urban activity system and travel patterns	1, 2, 4
2. demonstrate the classical methods of urban transportation planning	1, 2, 3, 5, 7, 9
3. apply four stage travel demand modeling	1, 2, 3, 5, 7, 9
4. understand the trip generations and trip distribution concepts	1, 2, 3, 5, 7, 9
5. understand the mode and route choice of trip makers	1, 2, 3, 5, 7, 9

COURSE PLAN – PART II

COURSE OVERVIEW

To understand the fundamental principles of transporation planning and learn the classsical four stage urban transportation planning models.

COURSE TEACHING AND LEARNING ACTIVITIES

S.No.	Week/Contact Hours	Topic	Mode of Delivery
1	Week 1	Syllabus and course content- Urban morphology - Urbanization and travel demand	PPT
2	Week 2	Urban activity systems and travel patterns – Systems approach – Trip based and Activity based approach	PPT
3	Week 3	Urban Transportation Planning – Goals, Objectives and Constraints	PPT
4	Week 4	Inventory, Model building, forecasting and Evaluation - Study area delineation – Zoning - UTP survey	PPT

5	Week 5	Trip generation models – Trip classification - productions and attractions	PPT
6	Week 6	Trip rate analysis - Multiple regression models – Category analysis	PPT
7	Week 7	Trip distribution models – Growth factor models	PPT
8	Week 8	Gravity model and Opportunity models.	PPT
9	Week 9	Modal split models – Mode choice behavior	PPT
10	Week 10	Trip end and trip interchange models- Probabilistic models	PPT
11	Week 11	Utility functions - Logit models - Two stage model	PPT
12	Week 12	Traffic assignment – Transportation networks – Minimum Path Algorithms	PPT
13	Week 13	Assignment methods – All or Nothing assignment and Multi path assignment - Route-choice behavior.	PPT
14	Week 14	User Equilibrium assignment-System optimum assignment	PPT
15	Week 15	Incremental assignment-Capacity restraint assignment	PPT
16	Week 16	Stochastic user equilibrium assignment- Dynamic Assignment	PPT
17	Week 17	Landuse transportation models – Urban forms and structures - Location models - Accessibility	PPT
18	Week 18	Landuse models - Lowry derivative models – Micro level Planning-International Practices	PPT

COURSE ASSESSMENT METHODS				
S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Mid semester examination	Week 10	1 hour 30 minutes	30
2	Assignment			20
3	Quizzes			10
4	Term Paper Presentation			10
CPA	Compensation Assessment*	Week 18	1 hour 30 minutes	30
5	Final Assessment *	Week 19	2 hours	30

***mandatory; refer to guidelines on page 4**

COURSE EXIT SURVEY (mention the ways in which the feedback about the course shall be assessed)

It is proposed to take feedback from the students, at the end of the semester to evaluate the execution of the course

COURSE POLICY (including compensation assessment to be specified)

- 100% attendance is desirable for every student, with minimum attendance being 75%.
- Attendance during each assessment is mandatory.

Compensation assessment would only be given to those students who have missed mid semester evaluation on genuine grounds.

ATTENDANCE POLICY (A uniform attendance policy as specified below shall be followed)

- At least 75% attendance in each course is mandatory.
- A maximum of 10% shall be allowed under On Duty (OD) category.
- Students with less than 65% of attendance shall be prevented from writing the final assessment and shall be awarded 'V' grade.

ACADEMIC DISHONESTY & PLAGIARISM

- Possessing a mobile phone, carrying bits of paper, talking to other students, copying from others during an assessment will be treated as punishable dishonesty.
- Zero mark to be awarded for the offenders. For copying from another student, both students get the same penalty of zero mark.
- The departmental disciplinary committee including the course faculty member, PAC

chairperson and the HoD, as members shall verify the facts of the malpractice and award the punishment if the student is found guilty. The report shall be submitted to the Academic office.

- The above policy against academic dishonesty shall be applicable for all the programmes.

ADDITIONAL INFORMATION, IF ANY

FOR APPROVAL

Dr Darshana O

Course Faculty _____ **CC- Chairperson** _____ **HOD** _____