



Subject: Public Transportation Planning - METTC11505

Type of course: Minor stream

Prerequisite: NIL

Rationale: Public transportation planning is essential for creating efficient, accessible, and sustainable transit systems. It reduces traffic congestion, lowers carbon emissions, and promotes energy efficiency by encouraging the use of shared transportation over private vehicles. Effective planning ensures equitable access to transportation, connecting people to jobs, education, and services, particularly in underserved communities. It also supports economic growth by improving mobility, reducing commute times, and fostering connectivity between urban and rural areas. Additionally, public transportation planning enhances the quality of life by reducing transportation costs for individuals, improving road safety, and minimizing environmental impacts. By anticipating future growth and needs, it helps build resilient and adaptable transit networks.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks					Total Marks
CI	T	P		C	Theory Marks		Practical Marks		
			ESE		MSE	V	P	ALA	
03	0	02	4	60	30	10	20	30	150

Legends: CI-Class Room Instructions; T – Tutorial; P - Practical; C – Credit; ESE - End Semester Examination; MSE- Mid Semester Examination; V – Viva; CA - Continuous Assessment; ALA- Active Learning Activities.

Continuous Assessment:

Sr. No	Active Learning Activities	Marks
1	Design transit network The faculty will assign a newly developing city for students to design a transit network, which they will then upload to the GMIU Web Portal.	10
2	Transit Cost Finance Student will prepare the transit cost finance of 1 st ALA and upload on GMIU Web Portal.	10



3	Case Study The faculty will assign each student group a city or town's transportation system to study, and the students will provide suggestions for a sustainable transportation system. And upload on GMIU Web Portal.	10
Total		30

Course Content:

Sr. No	Course content	Hrs	% Weightage
1	Urban Transportation Issues, problems, safety, role of transit, choice of transit technology, evolution of urban transportation, operational capability during disaster Transit System Modes; bus& coaches, Train (Commuter, intercity and high-speed rail), tram and light rail, Rapid transit, personal rapid transit, cable-propelled transit, Ferry, Auto-Rickshaws, paratransit system Innovative technology. Feeder services	13	30
2	Planning Transit Networks Planning approach, accessibility, connectivity to other modes, network configuration, design of single route, Spacing of Routes & bus stops, frequency of service. Transit Operation & Management Operating cycle, scheduling, special services, fare collection.	13	30
3	Transit & Urban Development Impact on development, land use thereby, urban form, environmental impact, energy policy, regulations: food & drinks, smoking, noise and banned items, associated public utilities: pedestrian crossings, public toilets, eateries	07	10
4	Transit Characteristics Characteristics of transit travel riders, attitudes, modal splits special group of users, passenger load factor. Transit Cost Finance & Polices Fund raising, Construction, vehicle and operating costs, elasticity of demands, future policies, policy issues, public private partnership (PPP)	12	20
Total		45	100



Suggested Specification table with Marks (Theory): 60

Distribution of Theory Marks (Revised Bloom's Taxonomy)						
Level	Remembrance (R)	Understanding (U)	Application (A)	Analyze (N)	Evaluate (E)	Create (C)
Weightage	20%	30%	30%	10%	10%	NA

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Course Outcome:

After learning the course, the students should be able to:	
CO1	Evolution of urban transportation and various issues, problems occurring
CO2	Understand various modes of transit system, its operation and management
CO3	Understand impact on Urban land policies, land use and environmental impacts were studied.
CO4	Identify various transit characteristics as well as transit cost, finance and policies.

List of Assignment

Assignment and tutorial base on above mention topic.

Instructional Method:

The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, may also use any of the tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.

From the content 10% topics are suggested for flipped mode instruction.

Students will use supplementary resources such as online videos, NPTEL/SWAYAM videos, e-courses, Virtual Laboratory

The internal evaluation will be done on the basis of Active Learning Assignment

Practical/Viva examination will be conducted at the end of semester for evaluation of performance of students in laboratory.

Web links and Video Lectures (e-Resources):

1. Urban Transportation Systems Planning:
<https://nptel.ac.in/courses/105105208>



Reference Books:

- [1] Urban mass transportation planning, ALAN BLACK, McGraw Hill (1995).
- [2] Planning for public transport, PETER R. WHILE, Hutchinson and Company Limited.
- [3] Public transport planning and management in developing countries, ASHISH VERMA, T.V. RAMANYYA, CRC Press (2014)

