GUJARAT TECHNOLOGICAL UNIVERSITY

BRANCH NAME: M.E.Civil (Transportation Engineering)
SUBJECT NAME: Transportation System Management
SUBJECT CODE: 3711307
1ˢᵗ Semester

Type of course: Elective-II

Prerequisite: Nil

Rationale: Due to rapid urbanization and increased vehicle ownership, the role of traffic management system management becomes crucial. The behavior of commuters and their response time also plays important role in the traffic management. It is compulsory to understand various TSM techniques in urban area. The role of Mass transportation plays an important role in reducing the pollution and congestion.Availability of proper parking place is very difficult to get in the urban area. The planning of the parkinglots is necessary to understand. The course includes the study of traffic operations improvement andparking management.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks
				Theory Marks		Practical Marks		
Th	Tut	Lab	C	ESE(E)	PA (M)	ESE (V)	PA(I)	
3	0	2	4	70	30	30	20	150

Content:

Sr. No.	Content	Total Hrs	% Weightage
1	Methodology & Data Collection: Methodological frame work, objectives and problems, conflicts resolution, strategic categories andaction elements, travel behavior impact and response time.	8	10%
2	TSM actions combinations and interactions, impact assessment and evaluation, monitoring and surveillance, Area wide data collection methodology, corridor data collection methodology.TSM Actions: Study of following TSM actions with respect to problems.	5	20%
3	Public transportation & HOV treatment - Toll discounts for car poolsduring peak periods, park and ride, carpooling, exclusive lanes, priority at ramp terminals, bus transfer stations, limited and skip-stop bus services, shared ride.	10	20%
4	Demand Management: Staggered work hours, flexible work hours, high peak period tolls, shuttle services, circulation services, extendedroutes.	7	10%
5	Traffic Operations Improvement: On-street parking ban, freeway ramp control & closure, travel on shoulders, one-way streets, reversible lanes, traffic calming, Right turn phase, right turn lanes, reroute turning traffic.	7	20%

6	Parking Management: Short term reserved parking, increased parkingrates, time duration limits, expanded off-street parking, Non-Motorized Transport- pedestrian only streets, Dial-a-ride for elderly & handicapped.	8	20%

Reference Books:

1. D, Arlington, Transportation System Management in 1980: State of the Art and FutureDirections, Transportation Research Board, 1980.
2. Institute of Transportation Engineers, Transportation and Traffic Engg. Hand Book,Prentice Hall, 1982
3. TRB Publications.

Course Outcome:

1. To make the students aware of low cost techniques for reducing problems of traffic and transportation system.
2. To give the concepts of data collection for TSM actions, its implementation and impactanalysis.
3. To provide the know-how of demand management, traffic operation improvement andparking management.

List of Experiments/ Tutorials:

1. Traffic data collection on congested/problematic corridor for TSM action.
2. Traffic data collection on congested/problematic traffic network area for TSM action.
3. Analysis of data and suggestion of suitable TSM techniques, preparation of alternatives.
4. Prediction of impacts due to suggested TSM alternatives- either by computer simulation or byactual implementation.
5. Problem solving for the problematic transit operation and parking management.
6. Group discussion on the proposed TSM solutions.

Major Equipment: NA

List of Open Source Software (May not be open source but useful for the subject)

MATLAB, OpenOffice ,EXCEL, SPSS, ANSYS

Learning website:

http://nptel.ac.in/
www.scilab.org/
https://ocw.mit.edu/courses/transportation-courses/