

GANPAT UNIVERSITY									
FACULTY OF ENGINEERING & TECHNOLOGY									
Programme		Bachelor of Technology			Branch/Spec.		Civil Engineering		
Semester		VII			Version		2.0.0.0		
Effective from Academic Year			2016-17		Effective for the batch Admitted in			2014-15	
Subject code		2CI703		Subject Name		HIGHWAY AND TRAFFIC ENGINEERING.			
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	3		1		4	Theory	40	60	100
Hours	3		2		5	Practical	35	15	50
Pre-requisites:									
Learning Outcome:									
<p>Students are expected to</p> <p>Understand the basic concepts used to design flexible and rigid pavements.</p> <p>apply pavement maintenance concepts to better manage road pavements</p> <p>practice the traffic surveys</p> <p>Understand the basic knowledge of traffic flow and its regulation and its control.</p>									
Theory syllabus									
Unit	Content								Hrs
1	Highway Planning and Administration : History of road development, Road planning in India, Highway administration.								3
2	Highway Geometrics : Alignment criteria and procedure, Types of highways,, Horizontal and vertical elements and design parameters, Problems of geometric design, cross sections of different roads.								8
3	Pavement Design : Types of pavements, Sub grade soils and properties, Pavement materials, testing of binders, road aggregate mixes, Design of flexible and rigid pavements, IRC specifications, and design problems.								6
4	Highway Construction: Construction of low cost roads, WBM roads, types of bituminous surfaces, major equipments, Construction of penetration macadam, bituminous carpet, Bituminous concrete roads, Cement concrete roads.								5
5	Highway Maintenance: Pavement evaluation, Surface and sub-surface drainage, Maintenance of bituminous and concrete roads, Concepts of overlays.								3

6	Traffic Engineering : Basic parameters, Traffic studies, Different traffic control devices, Signs , markings, signals, Traffic management, One way system, grade separated system, highway capacity , level of service.	6
7	Highway Project: Highway project preparation, surveys and investigations, project estimates, preparing project drawing and report.	2
8	Highways in Specific Areas: Highways in hilly region, desert areas, waterlogged areas, issues and specific treatments.	2
9	Transportation Structures: Types of bridges, Structure and function of components of bridge , surface and subsurface investigation of bridge site s, hydraulic data, scouring loading standards, construction techniques	3
Practical content		
I. Term work shall consist of tests on cement and aggregate, fresh concrete and hardened concrete. It includes destructive, partial destructive and non- destructive tests. II. Term work shall include report on topic assigned by respective lab in-charge. III. Term work shall include field visit and students will have to submit a report IV. Oral/Practical marks include viva-voce on practical performed and submitted reports.		
Text Books		
1	Kadiyali L. R., “ Principles and Practice of Highway Engineering”, Khanna Technical Publications, Delhi	
2	Khanna S. K. and Justo, C. E. G, “Highway Engineering”	
Reference Books		
1	Different Indian Roads Congress Codes, Indian Road Congress pub., New Delhi.	
2	Bridge Engg by S.p.Bindra, Dhanpatrai and sons.	