



अनुसंधान प्रबंधन और राष्ट्रीय प्रौद्योगिकी संस्थान  
**RESEARCH MANAGEMENT AND NATIONAL INSTITUTE OF TECHNOLOGY**  
(An Autonomous institution under Ministry of HRD, Govt. of india)  
(A 9001-2008 ISO CERTIFIED INTERNATIONAL B-SCHOOL)

**HIGHWAY ENGINEERING**

**On**

**UGC Model Curriculum**

# M. Tech. HIGHWAY ENGINEERING SYLLABUS

## SEMESTER – I

S.No.	Course Code	Course Title	L	T	P	C	TCH
<b>Theory</b>							
1	PMA105	Numerical methods and Applied Statistics	3	1	0	4	4
2	PHE101	Pavement Analysis and Design	3	1	0	4	4
3	PHE102	Pavement Materials	3	0	1	4	4
4	PHE103	Bridge Engineering	3	1	0	4	4
5	PHE104	Highway Design & Traffic Analysis	3	1	0	4	4
6	PHE105	Theory of Traffic flow	3	1	0	4	3
<b>Practical</b>							
7	PHE106	Traffic and Pavement Engineering Lab	0	0	4	2	4
<b>Total</b>						<b>26</b>	<b>27</b>

## SEMESTER – II

S.No.	Course Code	Course Title	L	T	P	C	TCH
<b>Theory</b>							
1	PHE201	Transit System Planning	3	1	0	4	3
2	PHE202	Highway Construction, Quality Control and Maintenance	3	1	0	4	4
3	PHE203	Transportation Planning	3	1	0	4	4
4	PHE204	Transport Economics and Management	3	1	0	4	3
5	-	Elective – I	3	0	0	3	3
6	-	Elective – II	3	0	0	3	3
<b>Practical</b>							
7	PHE205	Computer Aided Transportation Engineering Lab	0	0	4	2	4
<b>Total</b>						<b>24</b>	<b>24</b>

## SEMESTER – III

S.No.	Course Code	Course Title	L	T	P	C	TCH
<b>Theory</b>							
1	-	Elective – III	3	0	0	3	3
2	-	Elective – IV	3	0	0	3	3
3	-	Elective – V	3	0	0	3	3
<b>Practical</b>							
4	PHE301	Practical Training (weeks in during summer)	-	-	-	2	0
5	PHE302	Seminar	0	0	2	1	2
6	PHE303	Project Work– Phase I	0	0	12	6	12
<b>Total</b>						<b>18</b>	<b>23</b>

**SEMESTER – IV**

S.No.	Course Code	Course Title	L	T	P	C	TCH
<b>Practical</b>							
1	PHE401	Project Work – Phase II	0	0	24	12	24
<b>Total</b>						<b>12</b>	<b>24</b>

**ELECTIVES  
SEMESTER II**

S.No.	Course Code	Course Title	L	T	P	C	TCH
1.	PHE701	Road Safety Engineering	3	0	0	3	3
2.	PHE702	GIS Application In Transportation Engineering	3	0	0	3	3
3.	PHE703	Evaluation and Strengthening of Pavements	3	0	0	3	3
4.	PHE704	Computer Simulation Application in Highway Engineering	3	0	0	3	3
5.	PHE705	Hill and Rural Road Planning and Construction	3	0	0	3	3
6.	PHE706	Environmental Impact Assessment For Transportation Projects	3	0	0	3	3
7.	PHE707	Accident Analysis and Safety Audit	3	0	0	3	3

**ELECTIVES  
SEMESTER III**

1.	PHE708	Highway Project Management	3	0	0	3	3
2.	PHE709	Engineering Solutions for Accident Reduction	3	0	0	3	3
3.	PHE710	Intelligent Transportation System	3	0	0	3	3
4.	PHE711	Advance Modeling Techniques in Highway Engineering	3	0	0	3	3
5.	PHE712	Ground Improvements Technique.	3	0	0	3	3
6.	PHE713	Land use and Transportation Engineering	3	0	0	3	3
7.	PHE714	Advanced Highway Design	3	0	0	3	3
8.	PHE715	Automobile Pollution Control	3	0	0	3	3
9.	PHE716	Highway Infrastructure Design	3	0	0	3	3
10.	PHE717	Concrete Technology	3	0	0	3	3