

<b>INSTITUTE</b>	<b>FACULTY OF TECHNOLOGY</b>
<b>PROGRAM</b>	<b>BACHELOR OF TECHNOLOGY (CIVIL ENGINEERING)</b>
<b>SEMESTER</b>	<b>6</b>
<b>COURSE TITLE</b>	<b>CONSTRUCTION SUPERVISION FOR ROADS AND RUNWAYS</b>
<b>COURSE CODE</b>	<b>01CI1610</b>
<b>COURSE CREDITS</b>	<b>1</b>

**Objective:**

- 1 To understand fundamentals of pavement structure.
- 2 To learn different types of construction procedures of pavement layers
- 3 To explore the fundamentals quality check of pavements.
- 4 To understand the basic of safety and healthy environment at construction site of pavement

**Course Outcomes:** After completion of this course, student will be able to:

- 1 Understand the necessity of constructing durable and quality pavements and their role in transportation and infrastructure development.
- 2 Apply knowledge of pavement construction processes and the job roles involved in the Roads & Runways Construction.
- 3 Analyze the specifications of construction materials for Flexible and Rigid Pavement.
- 4 Evaluate the standard procedures and safety measures involved in pavement construction.

**Pre-requisite of course:** Highway Engineering

**Teaching and Examination Scheme**

<b>Theory Hours</b>	<b>Tutorial Hours</b>	<b>Practical Hours</b>	<b>ESE</b>	<b>IA</b>	<b>CSE</b>	<b>Viva</b>	<b>Term Work</b>
0	0	2	0	0	0	50	0
<b>Contents : Unit</b>	<b>Topics</b>						<b>Contact Hours</b>
<b>Total Hours</b>							

### Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
1	<b>Introduction</b> Necessity to construct durable and quality pavement and function of the same in transportation/ infrastructure development, pavement construction, job roles involved in the “Roads & Runways Construction” occupation, Basic knowledge of Unit of measurement and their conversion, Basic knowledge of arithmetic calculation, Different parts of rigid and flexible pavement	4
2	<b>Pavement Construction</b> Sequence of pavement construction activities, Procedure of material handling and storing, Organizational service request procedures of tools, materials, Equipment, Specification and capacity of construction Equipment, Measures and arrangements to control vehicular traffic	8
3	<b>Specification of Constructions</b> Specifications of construction materials used in each course of pavement construction, Types of base courses used and method of construction, Specification and location of expansion joint, Different grades of concrete and bitumen used in rigid and flexible pavement, Specifications of drainage pipes and accessories, Standard construction methodology of drainage works	8
4	<b>Checks for completed road work</b> Curing process of concrete and different method of curing such as ponding, using gunny bags, application of curing compounds, specification and guidelines of application of materials used for road construction work, such as bitumen, epoxy solutions, admixtures, curing compound, dowel bars etc	6
5	<b>Safe and Healthy work Environment</b> Common types of hazards involved in construction sites in rigid and flexible pavement construction work, Types of hazards involved in handling of hot asphalt mix works, Safe working methods as per standard norms and actions to be taken under emergency situations, Standard procedure of handling, storing and stacking material used in pavement construction work, safe disposal of waste depending upon type of waste	4
<b>Total Hours</b>		<b>30</b>

### Textbook :

- 1 Analysis of Pavement Structures,, Das, A, CRC Press, Taylor and Francis Group, Florida, USA, 2015

### References:

- 1 Highway Engineering, Highway Engineering, S.K. Khanna and C.E.G. Gusto, A.Veeraragavan, Nem Chand and Bros, 2012

### Suggested Theory Distribution:

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery					
<b>Remember / Knowledge</b>	<b>Understand</b>	<b>Apply</b>	<b>Analyze</b>	<b>Evaluate</b>	<b>Higher order Thinking / Creative</b>
5.00	10.00	35.00	30.00	15.00	5.00

**Instructional Method:**

- 1 At the start of course, the course delivery pattern, prerequisite of the subject will be discussed
- 2 Lectures will be taken in class room with the use of multi-media presentations, white board– mix of both.
- 3 Attendance is compulsory in lectures and laboratory which carries a 5% component of the overall evaluation.
- 4 Minimum two internal exams will be conducted and average of two will be considered as a part of 15% overall evaluation
- 5 Assignments based on course content will be given to the students at the end of each unit/topic and will be evaluated at regular interval. It carries a weightage of 5%.
- 6 Surprise tests/Quizzes will be conducted which carries 5% component of the overall evaluation