

**SAMANTA CHANDRASEKHAR INSTITUTE
OF TECHNOLOGY & MANAGEMENT**
SEMILIGUDA-763008, KORAPUT

DEPT. OF.....CIVIL ENGINEERING.....

LESSON PLAN AND PROGRESS REGISTER

(To be maintained by all members of the teaching staff)

SESSION....2023-2024 (ODD-SEM)
3RD SEMESTER
DIPLOMA

NAME Manisha Mishra
DESIGNATION H.O.D
DEPT. Dept. of Civil Engineering.

Manisha
SIGNATURE

This Lesson Plan and Progress Register is to be submitted to the Director for verification and counter signature twice in every semester. The H.O.D. must verify and sign this Register before submission.

COURSES ALLOTTED	
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FOR DIFFERENT BRANCHES & SEMESTER (Degree/Diploma/+2 Science)

Semister	Course No.	Course Title
3rd Semester	Th2.	Geotechnical Engineering

N.B. : Submission of Annual Lesson Plan-cum-Progress Register and performance Report for Assessment are responsibility of each faculty member.

LESSON PLAN

Degree/Diploma/2nd Semester
(Theory/Pract/Lab/Workshop)

Semester 3rd Semester Branch Civil Engineering

Month & Date	Course No. & Title	Brief note of the topics to be covered	No. of Classes Required
August	Th2- Geotechni- cal Engg.	1. <u>INTRODUCTION</u>	01
→ 14/08/23		1.1 Soil & Soil Engineering	
		1.2 Scope of Soil Mechanics	
→ 16/08/23		1.3 Origin and Formation of Soil.	01
→ 18/08/23		2. <u>PRELIMINARY DEFINITIONS & RELATIONSHIPS</u>	01
→ 19/08/23		2.1 Soil as a three phase system.	01
→ 21/08/23		2.2 Water content, Density, sp. gravity, void ratio,	
to 25/08/23		porosity, percentage of air voids, air content, degree of saturation, density index, Bulk/ Submerged/ Saturated density, Inter-relationship of various soil parameters.	04
	-do-		
		3. <u>INDEX PROPERTIES OF SOIL</u>	
→ 26/08/23		3.1 Water Content	01
		3.2 Specific gravity.	
→ 28/08/23		3.3 Particle size distribution & Sieve analysis,	01
		Wet mechanical analysis, Particle size distribution curve & its use.	

Month & Date	Course No. & Title
→ 14/08/23	Th2- Geotechni- cal Engg.
→ 16/08/23	
→ 18/08/23	
→ 19/08/23	
→ 21/08/23	
→ 22/08/23	
→ 23/08/23	
→ 25/08/23	

LESSON PLAN

Degree/Diploma/+2 Science
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Semester 3rd Semester Branch Civil Engineering

Month & Date	Course No. & Title	Brief note of the topics to be covered	No. of Classes Required
August	Th2. Geotechnical Engg.	1. <u>INTRODUCTION</u> 1.1 Soil & Soil Engineering	01
→ 14/08/23		1.2 Scope of Soil Mechanics	
→ 16/08/23		1.3 Origin and Formation of Soil.	01
→ 18/08/23		2. <u>PRELIMINARY DEFINITIONS, & RELATIONSHIPS</u>	01
→ 19/08/23		2.1 Soil as a three phase system.	01
→ 21/08/23		2.2 Water content, Density, sp. gravity, void ratio,	
to 25/08/23		porosity, percentage of air voids, air content, degree of	04
	-do-	saturation, density index, Bulk/Submerged/Saturated density,	
		Inter-Relationship of various soil parameters.	
		3. <u>INDEX PROPERTIES OF SOIL</u>	
→ 26/08/23		3.1 Water content	01
		3.2 Specific gravity.	
→ 28/08/23		3.3 Particle size distribution Sieve analysis,	01
		Wet mechanical analysis, Particle size distribution curve & its use.	

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Degree/Diploma/+2 Science
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Semester 3rd Semester Branch Civil Engineering

Month & Date	Course No. & Title	Brief note of the topics to be covered	No. of Classes Required
→ August 29/08/23	Th2. Geotechni	3.4 Consistency of soils, Atterberg's limits, Plasticity Index, Consistency index, Liquidity Index.	02
Sept. 01/09/23	-cal Engg.		
	↑	4. <u>CLASSIFICATION OF SOILS</u>	
→ 02/09/23		4.1 General	01
→ 04/09/23		4.2 IS Classification, Plasticity chart.	05
to 11/09/23		5. <u>PERMEABILITY & SEEPAGE</u>	
→ 12/09/23		5.1 Concept of Permeability, Darcy's Law, coefficient of Permeability.	02
13/09/23			
→ 15/09/23	-do-	5.2 Factors affecting Permeability.	01
→ 16/09/23		5.3 Constant Head Permeability, and Falling Head Permeability Test.	02
18/09/23			
→ 22/09/23		5.4 Seepage Pressure, Effective stress, Phenomena of Quick Sand.	02
23/09/23			
		6. <u>COMPACTION AND CONSOLIDATION</u>	
		6.1 Compaction's General, Light and Heavy Compaction Test,	1
	↓		

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Semester 3rd Semester

Branch Civil Engineering

Month & Date	Course No. & Title	Brief note of the topics to be covered	No. of Classes Required
Sept. → 25/09/23 & 26/09/23	Th2. Geotechnical Engg.	could optimum moisture content of soil, Maximum dry density, zero air void line, Factors affecting compaction.	02
→ 27/09/23 & 30/09/23		6.1 Field Compaction Methods & its Suitability.	02
October → 03/10/23 & 04/10/23		6.2 Consolidation, distinction bet ⁿ compaction and consolidation.	02
→ 06/10/23 & 07/10/23		6.3 Terzaghi's Model analogy of compression/springs showing the process of Consolidation field implications.	02
		7. <u>SHEAR STRENGTH</u>	
→ 09/10/23 & 10/10/23	-do-	7.1 Concept of shear strength, Mohr's Colomb Theory, Cohesion, Angle of Internal Friction	02
→ 11/10/23 & 13/10/23		7.1 Strength Envelop for different type of soil. Measurement of shear strength - Direct Shear Test,	02
→ 14/10/23 & 16/10/23		triaxial shear test, Unconfined Compression Test, Vane shear Test.	02
		(concept).	

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Semester 3rd Semester Branch Civil Engineering

Month & Date	Course No. & Title	Brief note of the topics to be covered	No. of Classes Required
October → 17/10/23	Th2. Geotechni-	8. <u>EARTH PRESSURE ON</u>	
18/10/23	cal Engg.	<u>RETAINING STRUCTURE</u>	
		8.1 Active earth pressure, Passive earth pressure, Earth Pressure at rest.	02
→ 20/10/23 to		8.2 Use of Rankine's formula for the following cases in	
Nov. 01/11/23		(cohesion-less soil only)	05
		(i) Backfill with no surcharge.	
		(ii) Backfill with uniform surcharge.	
→ 03/11/23 to		9. <u>FOUNDATION</u>	
07/11/23		<u>ENGINEERING</u>	
		9.1 Functions of foundation, Shallow and Deep Found ⁿ	04
		(with sketches)	
	-do-	Type of failure (General shear, Local shear & Punching shear)	
→ 08/11/23 to		9.2 Bearing Capacity of Soil, Bearing capacity	08
17/11/23		of soils using Terzaghi's formula & IS code	
		formula of strip, circular & square footing, Effect of	
→ 18/11/23 &		water table on bearing Capacity	02
20/11/23		of soil.	

LESSON PLAN Degree/Diploma/+2 Science
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Degree/Diploma/+2 Science
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Semester. 3rd Semester

Branch Civil Engineering

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(To be maintained by all members of the teaching staff)

SESSION.....2023-2024 (ODD-SEM)

5TH SEMESTER

NAME

Manisha Mishra

DESIGNATION

H.O.D

DEPT.

Dept of Civil Engineering.

Manisha
SIGNATURE

LESSON PLAN

Degree/Diploma/+2 Science
(Theory/Pract/Lab/Workshop)

Semester 5th Semester Branch Civil Engineering

Month & Date	Course No. & Title	Brief note of the topics to be covered	No. of Classes Required
→ August 14/08/23	Ths Railway	<u>SECTION-A - RAILWAYS</u> 1. Introduction	01
	Bridge & Engg.	1.1 Railway Terminology.	
→ 16/08/23	↑	1.2 Advantages of Railways	01
		1.3 Classification of Indian Railways.	
→ 17/08/23 & 18/08/23		2. <u>Permanent Way</u> : 2.1 Definitions and Components of a permanent way.	02
→ 21/08/23 to 23/08/23		2.2 Concept of gauge, different gauges prevalent in India, suitability of these gauges under different conditions.	03
	- do -		
→ 24/08/23 & 25/08/23		3. <u>Track Materials</u> 3.1 Rails	
		3.1.1 Functions and Requirements of Rails	02
		3.1.2 Types of Rail sections, Length of Rails	
→ 28/08/23 & 29/08/23		3.1.3 Rail joints - types, requirement of an ideal joints.	
		3.1.4 purpose of welding of rails and its advantages.	02

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Degree/Diploma/+2 Science
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Semester 5th Semester Branch Civil Engineering

Month & Date	Course No. & Title	Brief note of the topics to be covered	No. of Classes Required
→ August 31/08/23	Th3. Railway	8.1.5 Creep- definition, causes and prevention.	01
→ Sept. 01/09/23	8 Bridge Engg.	3.2 Sleepers	01
		3.2.1 Definitions, functions & requirements of sleepers.	
		3.2.2 Classification of sleepers.	
→ 04/09/23		3.2.3 Advantages & Disadvantages of different types of sleepers.	01
→ 05/09/23		3.3 Ballast.	01
		3.3.1 Functions and Requirements of Ballast.	
→ 07/09/23		3.3.2 Materials for Ballast.	01
→ 08/09/23	-do-	3.4 fixtures of Broad Gauge.	01
		3.4.1 Connections of Rails to Rail fish plate, fish bolts	
		3.4.2 Connections of Rails to sleepers.	
→ 11/09/23 to 14/09/23		4. Geometric of Broad Gauge.	04
		4.1 Typical Cross-sections of single and double broad gauge railway track in cutting & embankment.	

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Semester 5th Semester Branch Civil Engineering

Month & Date	Course No. & Title	Brief note of the topics to be covered	No. of Classes Required
→ Sept. 15/09/23 & 18/09/23	Th3. Railway	4.2 Permanent & Temporary Land Width.	02
→ 21/09/23 & 22/09/23	& Bridge	4.3 Gradients of Drainage	02
→ 25/09/23 & 26/09/23	Engg. ↑	4.4 Super elevation - necessity & limited values.	02
→ 27/09/23		5. <u>Points and Crossings</u>	01
→ 28/09/23 to october 04/10/23		5.1 Definitions and Necessity 5.2 Types of points and crossings with Tie diagrams.	03
		6. <u>Laying & Maintenance of Track.</u>	
→ 05/10/23 to 09/10/23		6.1 Methods of Laying & maintenance of Track	03
→ 10/10/23	-do-	6.2 Duties of permanent way inspector.	01
		<u>Section-B in BRIDGES</u>	
		1. Introduction to Bridges.	
→ 11/10/23		1.1 Definitions 1.2 Components of Bridges.	01
→ 12/10/23		1.3 Classification of Bridges. 1.4 Requirements of Ideal Bridges.	01
		2. <u>Bridge Site Investigation, hydrology & Planning</u>	
→ 13/10/23 & 16/10/23		2.1 Selection of Bridge Site 2.2 Determination of flood discharge.	02

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Semester 5th Semester Branch Civil Engineering

Month & Date	Course No. & Title	Brief note of the topics to be covered	No. of Classes Required
→ October 17/10/23 to 19/10/23	Th3. Railway	2.3 Waterway & Economic span 2.4 Afflux, clearance & P.B.	03
→ 20/10/23 to 31/10/23	Bridge & Bridge Engg.	3. <u>Bridge Foundations</u> 3.1 Scour depth m in depth of foundation.	03
→ Nov. 01/11/23 to 07/11/23		3.2 Types of Bridge found ⁿ 3.3 Cofferdam	05
→ 08/11/23 to 10/11/23		4. <u>Bridge Substructure & Approaches</u> 4.1 Types of pierce 4.2 Types of abutments	03
→ 14/11/23 to 15/11/23		4.3 Types of wing walls. 4.4 Approaches	02
→ 16/11/23 to 20/11/23		5. <u>Culvert & Causeway</u> Types of culverts & causeways	05
→ 21/11/23 to 23/11/23	-do-	(Brief Descriptions) Revision of Permanent way, Track materials. i.e sleepers, ballasts, rails, creep of rails etc.	05
→ 24/11/23 to 29/11/23		Revision classes of Geometric of Broad Gauges. Points & Crossings, Laying & maintenance of Track.	05
→ 30/11/23		Bridge found ⁿ & Substructure.	02

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Semester 5th Semester Branch Civil Engineering

Month & Date	Course No. & Title	Brief note of the topics to be covered	No. of Classes Required
→ August 22/08/23	Pr-1 Civil Engineering	1.0 Tests on Soil	
	Lab -11	1.1 Determination of specific gravity of soil by pycnometer/density bottle method.	
→ 29/08/23		1.2 Determination of field density of soil by core-cutter method.	
→ Sept. 05/09/23		1.3 Determination of Particle size gradation of sand/gravel by sieve analysis	
→ 12/09/23		1.5 (a) Determination of Liquid Limit of soil by Casagrande's apparatus	
	-do-		
→ 23/09/23		1.5 (b) Determination of Plastic limit of soil	
→ 26/09/23		1.6 Determination of Shrinkage limit of soil	
→ October 03/10/23		1.7 Determination of MDD and OMC of soil by using Modified Proctor Test	
→ 10/10/23		1.10. Determination of coefficient of permeability of soil by constant head method	
		(Permeameter method)	

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Semester 5th Semester Branch Civil Engineering

Month & Date	Course No. & Title	Brief note of the topics to be covered	No. of Classes Required
→ August 22/08/23	Pr-1 Civil Engineering	1.0 Tests on Soil	
	Lab -11	1.1 Determination of Specific gravity of soil by pycnometer/density bottle method.	
→ 29/08/23		1.2 Determination of field density of soil by core-cutter method.	
→ Sept. 05/09/23		1.3 Determination of Particle size gradation of sand/gravel by sieve analysis	
→ 12/09/23		1.5 (a) Determination of Liquid Limit of soil by Casagrande's apparatus	
	-do-		
→ 23/09/23		1.5 (b) Determination of Plastic limit of soil	
→ 26/09/23		1.6 Determination of Shrinkage limit of soil	
→ October 03/10/23		1.7 Determination of MDD and OMC of soil by using Modified Proctor Test.	
→ 10/10/23		1.10. Determination of coefficient of permeability of soil by constant head method	
		(Permeameter method)	

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Semester 5th Semester Branch Civil Engineering

Month & Date	Course No. & Title	Brief note of the topics to be covered	No. of Classes Required
October	Pr-1 Civil Engineering	2.0 Hydraulics Laboratory.	
→ 17/10/23	Lab-11	2.1 Verification of Bernoulli's Theorem.	
→ 28/10/23		2.2 Determination of Cd of rectangular notch fitted in open Channel.	
Nov.		3.0 Transportation Laboratory.	
→ 01/11/23		3.1 Penetration Test of Bitumen	
→ 07/11/23		3.2 Ductility Test of Bitumen	
	-do-	4.0 Public health Engineering Laboratory.	
→ 11/11/23		4.1 Determination of Turbidity of water sample.	
→ 14/11/23		4.2 Determination of pH of water sample using (a) pH meter	
→ 21/11/23		4.3 Determination of chloride content of a water sample by using method of filtration.	
→ 28/11/23		4.5 Determination of DO in a water sample.	