LESSON PLAN OF 5TH SEMESTER(2026-27) CIVIL ENGINEERING

Discipline:- CIVIL ENGG.	Semester:-5TH	Name of the Teaching Faculty SWAGATIKA SAMAL (LECTURER)
Subject:- ADVANCED CONSTRUCTION TECHNOLOGY(TH.4)	No of Days/per Week Class Allotted :-03	Semester From:- 01/07/2026 To:- 05/11/2026 No of Weeks:- 19
Week	**Class Day**	**Theory/ Practical Topics**
1st	1st	**UNIT –I** **Advanced Construction Materials** • Fibres: Use and properties of steel,
	2nd	polypropylene, carbon and glass fibres.
	3rd	• Plastics: Use and properties of PVC, RPVC
2nd	1st	HDPE, FRP, GRP
	2nd	• Miscellaneous Materials: Properties and uses of acoustics materials
	3rd	wall claddings, plaster boards, micro-silica
3rd	1st	waterproofing materials, adhesives.
	2nd	• Use of waste products and industrial by products in bricks, blocks, concrete and mortar.
	3rd	**UNIT –II** **Advanced Concreting Methods and Equipments** • Ready Mix Concrete: Necessity and use of ready mix concrete
4th	1st	Products and equipments for ready mix concrete plant
	2nd	Conveying of ready mix concrete
	3rd	transit mixers ,Function
5th	1st	• Vibrators for concrete consolidation
	2nd	Internal, needle, surface, platform and form vibrators.
	3rd	• Underwater Concreting
6th	1st	Procedure and equipments required for Tremie method,
	2nd	Drop bucket method. Properties
	3rd	workability and water cement ratio of the concrete
7th	1st	• Special concrete: procedure and uses of special concretes
	2nd	Roller compacted concrete,
	3rd	Self-compacting concrete (SCC), Steel fibre reinforced concrete
8th	1st	Foam concrete, shotcreting.
	2nd	**UNIT –III** **Advanced Technology in Constructions** • Construction of bridges and flyovers
	3rd	Equipments and machineries required for foundation and super structure.
9th	1st	• Construction of multi-storeyed Building
	2nd	Equipments and machinery required for construction of multi-storeyed building such as use of lifts, belt conveyers,
	3rd	pumping of concrete.
10th	1st	• Prefabricated construction: Methods of prefabrication
	2nd	Plant fabrication and site fabrication,
	3rd	All prefabricated building elements such as wall panels, slab panels, beams, columns,
11th	1st	door and window frames etc. Equipments and machineries used for placing
	2nd	Jointing of prefabricated elements.
	3rd	• Strengthening of embankments by soil reinforcing techniques using geo-synthetics

12th	1st	**UNIT –IV Hoisting and Conveying Equipments** • Hoisting Equipments: Principles and working of Derrick-Pole
	2nd	Gin Pole, Crane, Power driven scotch derrick crane
	3rd	Hand operated crane, Locomotive crane, Tower crane, Lattice Girder,
13th	1st	Winches, Elevators, ladders. Crawler cranes
	2nd	Truck mounted cranes, Gantry cranes, Mast cranes
	3rd	• Conveying Equipments ,Introduction
14th	1st	Working of belt conveyers
	2nd	types of belts and conveying mechanism.
	3rd	Capacity and use of dumpers, tractors and trucks
15th	1st	**UNIT –V** **Miscellaneous Machineries and Equipments** • Excavation Equipments
	2nd	Use, working and output of following machinery – bull dozers
	3rd	scrapers, graders, Clam Shell, trenching equipment,
16th	1st	Tunnel boring machine, Wheel mounted belt loaders
	2nd	power shovels, JCB, and drag lines.
	3rd	• Compacting Equipments: Output of different types of rollers such as plain rollers
17th	1st	ship footed rollers, vibratory, pneumatic rollers rammers
	2nd	• Miscellaneous Equipments: Working and selection of equipments
	3rd	Pile driving equipments,
18th	1st	Pile hammers, Hot mix bitumen plant
	2nd	bitumen paver, grouting equipment
	3rd	guniting equipments, floor polishing and cutting machine
19th	1st	selection of drilling pattern for blasting
	2nd	Bentonite/mud slurry in drilling,
	3rd	Explosives for blasting, Dynamite, process of using explosives

S. Samal 23.06.26
LECTURER

23.06.2026
SR.LECTURER

Sr. Lecturer
Civil Engg. Dept.
G.I.E.T(Poly),Jagatpur,Ctk

PRINCIPAL 23/6/26

Principal
GIET (Polytechnic)
Jagatpur, Cuttack