DEPARTMENT OF CIVIL ENGINEERING

NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

COURSE PLAN – PART I			
Course Title	CONSTRUCTION TECHNIQUES AND EQUIPMENT		
Course Code	CEPE10	**No. of Credits**	03
Course Code of Pre-requisite subject(s)	NIL		
Session	January 2018	**Section (if, applicable)**	A and B
Name of Faculty	Dr. Jayachandran K.	**Department**	Civil Engineering
Email	jay@nitt.edu	**Telephone No.**	99526 09907
Name of Course Coordinator(s) (if, applicable)			
E-mail		**Telephone No.**	
Course Type	☐ Core course	◙ **Elective course**	

Syllabus (approved in BoS)

Principles of construction: Bonding , Reinforced brick work , Stone masonry, Hollow block masonry Composite masonry, Cavity walls, Flooring, Formwork, Centering and Shuttering sheet piles, Slip and moving forms, Roofs and roof covering, Joints in Concrete, Plastering and Pointing, Shoring and Scaffolding, Under pinning, Submerge Structures.

Prefabricated structures and building services: Prefabricated panels & structures, Production, Transportation and Erection of structures, Sound insulations, Ventilations, Fire resisting construction, Damp proofing, Termite proofing.

Construction damages & repair techniques: Causes of damage and deterioration in masonry and concrete structures, Symptoms & Diagnosis, Types of repair and rehabilitation techniques.

Basics of construction equipment: Factors affecting the selection of equipment, economic life of equipment, cost of equipment, maintenance of equipment. Construction equipment and machinery: Earthwork equipment, Hoisting and lifting equipment, Material handling equipment, Concrete equipment, Dewatering equipment.

COURSE OBJECTIVES

1. To learn the principles of construction of building components
2. To know about prefabricated construction and building services
3. To study the different repair and rehabilitation technique
4. To understand the planning and operation of various construction equipment

COURSE OUTCOMES (CO) (Refer student attendance book for the list of POs)	
Course Outcomes	**Aligned Programme Outcomes (PO)**
On completion of the course, the students will be able to:	
1. Supervise and execute major construction jobs with the knowledge of the different construction techniques	1,6,7,9,10
2. Different techniques to construct the different structures by choosing appropriate materials and methods.	3,4,5,6,11
3. Identify the building defects and apply suitable repair techniques to rectify them	3,4,6,7,8,12
4. Evaluate the costs of equipment and make proper selection of the suitable construction equipment	1,2,4,5
5. Ensure the proper completion of a construction task using particular construction equipment	1,2,5,7,12

COURSE PLAN – PART II
COURSE OVERVIEW
This course entails the students to learn about the fundamentals of different construction methods for different components of a structures, diagnosis and repair of damages, startergies to select appropriate machines available for different construction activities.

COURSE TEACHING AND LEARNING ACTIVITIES

No.	**Schedule** (3 Hrs/week)	**Topic**	**Mode of Delivery**
1	Jan 2nd week	Introduction, Bonding, Reinforced brick work, Stone masonry	Lecture by C&T / PPT
2	Jan 3rd week	Hollow block masonry Composite masonry, Cavity walls	
3	Jan 3rd week	Flooring, Formwork, Centering and Shuttering sheet piles, under pinning, Submerge Structures.	
4	Jan 4th week	Roofs and roof covering, Joints in Concrete, Plastering and Pointing	
5	Jan 4th week	Shoring and Scaffolding, Slip and moving forms,	
6	Feb 1st week	Prefabricated panels & structures, Production, Transportation and Erection of structures,	
7	Feb 2nd week	Sound insulations, Ventilations, Fire resisting construction, Damp proofing, Termite proofing	
8	Feb 3rd week	Causes of damage and deterioration in masonry and concrete structures,	
9	Feb 4th week	Symptoms & Diagnosis	
10	March 1st week	Types of repair and rehabilitation techniques.	
11	March 2nd week	Factors affecting the selection of equipment, economic life of equipment	
12	March 3rd week	Cost of equipment, maintenance of equipment.	
13	March 4th week	Earthwork equipment, Hoisting and lifting, equipment, Material handling equipment	
14	April 1st week	Concrete equipment, Dewatering equipment.	
15	April 2nd week	Clear doubts and tutorials on advanced technologies, discussions on research and development related to this course.	

COURSE ASSESSMENT METHODS

S.No.	Mode of Assessment	Week/Date	Duration	Weightage (%)
1	Assignment – I	Feb 2nd week		10
2	Cyclic test – I	Feb 3rd week	1 Hour	20
3	Assignment – II	March 2nd week		10
4	Cyclic test – II	March 4th week	1 Hour	20
CPA	Compensation Assessment	April 3rd week	1 Hour	20
5	Final Assessment	As per schedule	3 Hours	40

COURSE EXIT SURVEY

- Feedback from students personally every month (which will remain confidential without revealing your identity to the concerned faculty)
- Exit survey from the students at the end of the session through questionnaire

COURSE POLICY

MODE OF CORRESPONDENCE

1. All the correspondence regarding the course will be communicated through webmail or intimated during class hours.
2. Queries / Clarifications (if necessary) may be e-mailed to jay@nitt.edu or can be communicated directly during Institute working hours.

ATTENDANCE

1. Attendance will be taken by the faculty in all the contact hours. Every student should maintain minimum of 75% attendance in these contact hours along with assessment criteria to attend the final semester examination.
2. Attending all the assessments (except compensation assessment) are MANDATORY for every student.
3. Any student, who fails to maintain 75% attendance need to appear for the compensation assessment.
4. Every student is expected to score minimum of 35% (including all the assessments) to pass the course. Otherwise the student would be declared fail and 'F' grade will be awarded. Further the student can take supplementary examination.

COMPENSATION ASSESSMENT

1. Those students who lacks the minimum attendance and missed any of the cyclic tests (CTs) due to genuine reasons, can appear for compensation assessment (CA) to get eligibility for writing the end semester examination.
2. Student who scores more than 60% marks in the CA will be eligible for attending the end semester examination.
3. For those who have appeared for all CTs and not having minimum attendance, the scores in the CA will not be considered for computing grades.
4. Students not having 75% as minimum attendance at the end of the semester and fail in CA (scoring less than 60%) will not be allowed to take final semester exam. They can appear for supplementary exam.

ACADEMIC HONESTY & PLAGIARISM

1. All the students are expected to be genuine during the course work. Taking of information by means of copying simulations, assignments, looking or attempting to look at another student's paper or bringing and using study material in any form for copying during any assessments is considered as dishonest.
2. Tendering of information such as giving one's program, assignments to another student to use or copy is also considered as plagiarism.
3. Preventing or hampering other students from pursuing their academic activities is also considered as academic dishonesty.
4. Any evidence of such academic dishonesty will result in the loss of marks on that assessment. Additionally, the names of those students so penalized will be reported to the class committee chairperson and HoD of the concerned department.

ADDITIONAL INFORMATION

FOR APPROVAL

Course Faculty _____ **CC-Chairperson** _____ **HOD** _____ 24/1/18