GOVERNMENT OF TAMILNADU

DIRECTORATE OF TECHNICAL EDUCATION, CHENNAI

STATE PROJECT COORDINATION UNIT

(Established Under Canada India Institutional Cooperation Project)

CURRICULUM

Course Name	**RCC DETAILING USING ACAD STRUCTURAL DETAILING**
Course Code	CE / 2020 / 004
Course Duration	40 Hours
Minimum Eligibility Criteria and Pre-requisites (if any)	10th / +2/Diploma/Graduates
Course Objectives	Training Module has been designed for the Participants to • Learn how to create more precise detailing and fabrication shop drawings for a variety of concrete structures. • Learn how to make intelligent reinforcement bar definitions, use bar shape codes recognition. • Learn to use customizable detailing and shop drawing styles to more freely adjust the look of final shop drawings with customizable styles for engineers and drafters.
Course Outcomes	At the end of the training, participants will be able to • Make intelligent reinforcement bar definitions, use bar shape codes recognition. • Produce schedules and material takeoffs automatically from drawings, or export them to Microsoft Excel or Microsoft Word software.
Expected Job Roles	• RCC Designer; Structural Draftsman / Designer

TEACHING AND SCHEME OF EXAMINATION						
Course Code	**Course Name**	**Hours**		**Assessment Marks**		**Duration of Examination**
				Min	**Max**	
CE / 2020 / 004	**RCC DETAILING USING ACAD STRUCTURAL DETAILING**	Theory	20	10	20	**3 Hours**
		Practical	20	40	80	
		Total	**40**	**50**	**100**	

DETAILED SYLLABUS

Unit No	Modules	No. of Hours	
		Theory	Practical
1.	**INTRODUCTION**	02	---
	Introduction to RCC Detailing using ACAD Structural Detailing, Getting Started Guide		
2.	**USER INTERFACE AND RCC DETAIL**	06	03
	Exploring the User Interface, Object Inspector, Program Preferences, Types of Reinforcement, Rules for Positioning a Reinforcing Bar in a Diagram, Descriptions of Reinforcement, Work flow, Creating a Reinforced Concrete Structure, Creating a Template		
3.	**DESIGN OF BEAM**	06	03
	Defining Formwork of a Beam, Adding Axes, Adding a stirrup in the cross-section, Adding a stirrup in the Elevation View, Defining Main Bars, Creating Cross-sections		
4.	**DESIGN OF COLUMNS AND FOOTINGS**	06	02
	Creating a Column and a spread footing, Adding Material Takeoffs, Definition of Views, Creating sheets and Adding view		
	PRACTICAL EXERCISES	-	12
	TOTAL THEORY AND PRACTICAL HOURS	**20**	**20**
	TOTAL HOURS	**40**	

PRACTICAL EXERCISES (12 HOURS)	
S.NO.	**List of Experiments**
1.	Detailing and fabricating a simply supported beam by using ACAD structural Detailing Software.
2.	Detailing and fabricating a slab by using ACAD structural Detailing Software.
3.	Detailing and fabricating a column by using ACAD structural Detailing Software.
4.	Detailing and fabricating a footing by using ACAD structural Detailing Software.

HARDWARE REQUIREMENT

SL. NO.	LIST OF TOOLS / EQUIPMENTS / MATERIALS
1.	CPU – 64 bit Intel® or AMD® multi-core processor
2.	RAM - 4 GB of RAM minimum (8 GB or more recommended)
3.	DISK SPACE -6 GB of free disk space for install
4.	VGA MONITOR
5.	USB KEYBOARD
6.	USB OPTICAL MOUSE

SOFTWARE REQUIREMENT

SL. NO.	NAME OF THE SOFTWARE
1.	ACAD STRUCTURAL DETAILING SOFTWARE - 2019

REFERENCE BOOKS

SL. NO	NAME OF THE BOOK	AUTHOR	PUBLISHER
1.	Reinforced Concrete Design	UnnikrishnaPillai	Tata McGraw-Hill Publishing Company Ltd., New Delhi.
2.	Reinforced Concrete Design	S. DevadasMenon	Tata McGraw-Hill Publishing Company Ltd., New Delhi.

ASSESSMENT AND CERTIFICATION

S.No	Criteria for Assessment
1.	A trainee will be assessed based on the performance in End Examination for Theory and Practical conducted internally in the CIICP Project Polytechnic College for a duration of 3 hours
2.	A trainee must have 75% of attendance to appear for End examination in Theory and Practical.
3.	The assessment for theory part will be based on the marks scored in the end examination on the knowledge bank of questions (1 Word/Objective type questions).
4.	The assessment for practical part will be based on the marks scored in the end examination conducted by the CIICP Project Polytechnic and assessed by the Examiners approved by Strategic Plan Implementation Committee (SPIC) of the project polytechnic.
5.	The passing criteria for successful completion of training is every trainee should score 50% of marks in the End Theory and Practical examination.
6.	On successful completion of training, Certificate will be issued to the participants by the Directorate of Technical Education through the Project Polytechnics.

END EXAMINATION

ALLOCATION OF MARKS

S. No.	Description	Maximum Marks
1.	THEORY EXAM	20
2.	PRACTICAL EXAM	
	a. DATA INPUT / CREATING ELEMENTS	10
	b. RCC DETAILING AND ANALYSIS	40
	c. REPORT / OUTPUT	10
	d. RECORD	20
	TOTAL	**100**

THEORY MODEL QUESTION PAPER

CE / 2020 / 004 – RCC DETAILING USING ACAD STRUCTURAL DETAILING
(Maximum Marks: 20)

(N.B: Answer any **Twenty** Questions) **20 x 1 = 20 Marks**

1. The working scale of CAD RC is_____
2. Which value is not used in general arrangement of drawings?
3. How many main categories are available in collection of outline tools?
4. Which version of AutoCAD is useful for switch on dynamic input when editing dynamic blocks?
5. Which toolbar icon is used to move along a line to set distance?
6. Which toolbar is used to find the midpoint between two known points?
7. What is the use of graphic style?
8. What is the Lap length of bar in staircase flight?
9. Which option is used to fix lap lengths to bar diameters?
10. What is the value of spacing of bars in column footing R.F.T?
11. What is the meaning of OSL?
12. How many number of groups are available for ranges?
13. Which toolbar is used to add a text to the bars?
14. What is meant by $Bmart?
15. What is meant by $multi?
16. Which command is used to edit the dimension?
17. Which command is used to delete the CADS RC entity from drawing and redraw it from the CADS RC data base?
18. What is the use of mirror command?
19. How to access check dimensions?
20. Write any two commands for finishing the detailing in CADS RC.
21. What are the reports we can view in formatted mode?
22. Write any two different types of beams?
23. Write any two different types of columns?
24. Which tool is used to set the insertion angle of the section on the drawing?
25. How to access trim openings?
