Subject Code: 01ME0803
Subject Name: Rapid Casting-II
B. Tech. Year - IIII (Semester - 8)

Type of course : Under Graduate

Prerequisite : Casting Processes

Rationale : The course aims to impart basic understanding and practice of inspection, simulation and automation in casting industries

Course Outcome :

After learning the course, the students will be competent
1. Understanding the basic concept of various destructive, non destructive and Metallurgical testing in casting
2. Application of various testing method incasting
3. Analysis of various testing method used in casting
4. Simulation of different components using AutoCAST.
5. Design of circuits using Arduino and Data Taker.

Teaching and Examination Scheme :

Teaching Scheme			Credits	Examination Marks					Total Marks
				Theory Marks			Practical Marks		
Theory	Tutorial	Practical	C	ESE(E)	IA	CSE	Viva(V)	Term Work	
2	0	4	4	50	30	20	25	25	150

Content :

Sr. No.	Content	Total Hrs
1	**Introduction:** Introduction, type of data, stages of inspection, classification of inspection, Economics analysis of inspection, basic concept of quality management	3
2	**Destructive Testing** Introduction, tensile test, compressive test, bending testing hardness testing, impact test, various standards for test.	6
3	**Non Destructive Testing and metallurgical testing** Introduction, Liquid penetration test, magnetic particle test, ultrasonic test, radiography test, Microscope for various ferrous and non ferrous metal	6
4	**Simulation** Introduction to basic parameters of casting, Parting line Selection, Design parameters of core Design parameters of core print, Design of Feeding and Filling System	8

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5	**Automation:** Introduction to Automation and IoT, Sensors, Data Acquisition, Arduino.	**4**

Distribution of Theory Marks

R Level	**U** Level	**A** Level	**N** Level	**E`** Level	**C** Level
10	**20**	**25**	**25**	**10**	**10**

Legends: R: Remember**; U:** Understand**; A:** Apply**; N:** Analyze**; E:** Evaluate**; C**: Create

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