DEPARTMENT OF METALLURGICAL AND MATERIALS ENGINEERING
NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

COURSE PLAN – PART I			
Name of the programme and specialization	M.Tech.		
Course Title	Welding Application Technology		
Course Code	MT626	No. of Credits	3
Course Code of Pre-requisite subject(s)	---		
Session	Jan. – June 2020	Section (if, applicable)	NA
Name of Faculty	Dr K Sivaprasad	Department	MME
Email	ksp@nitt.edu	Telephone No.	0431-2503466
Name of Course oordinator(s) (if, applicable)	NA		
E-mail	---	Telephone No.	---
Course Type	☐ Core course	☑ Elective course	

Syllabus (approved in BoS)

Heat exchanges, power cycle piping, super heaters, reheaters, economiser, auxiliary pipes, materials, processes and testing/inspection

Materials, processes, fabrication techniques and field welding for pressure vessel applications

Materials, processes, fabrication and construction, use of automatic welding and systems in automobile industry, automation

Oil and gas industry, materials, processes, fabrication, inspection and testing, case studies, recent trends and developments

Materials, processes, fabrication, inspection and testing, reasons for stringent quality control measures in nuclear industry

COURSE OBJECTIVES

To learn the Heat exchanges, power cycles, heating equipment's, materials and process used in making and testing of weld joints

To understand the materials, processes, fabrication techniques used in welding of pressure vessels and in automatic welding systems used for automobile industry

To gain knowledge of the materials, processes, fabrication, inspection and stringent quality control procedures used in Oil, gas and nuclear industries

COURSE OUTCOMES (CO)	
Course Outcomes	**Aligned Programme Outcomes (PO)**
Explain the Heat exchanges, power cycles, heating equipment's, materials and processes used in assembling, welding and testing of weld joints.	[1, 2, 3, 5]
Select the appropriate materials, processes and fabrication techniques for welding of pressure vessels, automobile components, equipment's used in oil and gas industries, and nuclear power plants.	[1, 6, 8, 9]
Carry out inspection and testing based on case studies, recent trends and developments and adopt stringent quality control measures in nuclear plants.	[5, 6, 8, 9, 11, 12]

COURSE PLAN – PART II			
COURSE OVERVIEW			
It's a 3 credit elective course in which some tutorial problems are combined so as to understand the concept with more examples.			
COURSE TEACHING AND LEARNING ACTIVITIES			
S.No.	**Week/Contact Hours**	**Topic**	**Mode of Delivery**
1	1st week	Heat exchanges, power cycle piping	Chalk & talk and PPT
2	**2nd week**	super heaters, reheaters, economiser,	Chalk & talk and PPT
3	**3rd week**	auxiliary pipes, materials, processes and testing/inspection	Chalk & talk and PPT
4	**4th week**	Materials, processes, fabrication techniques	Chalk & talk and PPT
5	**5th week**	field welding for pressure vessel applications	Chalk & talk and PPT
6	**6th week**	Materials, processes, fabrication and construction	Chalk & talk and PPT

7	**7th week**	use of automatic welding and systems in automobile industry, automation	Chalk & talk and PPT
8	**8th week**	Oil and gas industry, materials, processes	Chalk & talk and PPT
9	**9th week**	fabrication, inspection and testing	Chalk & talk and PPT
10	**10th week**	case studies, recent trends and developments	Chalk & talk and PPT
11	**11th week**	Materials, processes, fabrication in nuclear industry	Chalk & talk and PPT
12	**12th week**	inspection and testing in nuclear industry; comparison with other industries	Chalk & talk and PPT
13	**13th week**	reasons for stringent quality control measures in nuclear industry	Chalk & talk and PPT

COURSE ASSESSMENT METHODS (shall range from 4 to 6)

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Written test 1	5th week	1 hr	20
2	Written test 2	10th week	1 hr	20
3	Presentations	12-14th weeks	2 weeks	10
CPA	Compensation Assessment*	15th week	1 hr	20
4	Final Assessment *	16th week	3 hrs	50

***mandatory; refer to guidelines on page 4**

COURSE EXIT SURVEY (mention the ways in which the feedback about the course shall be assessed)

Standard feedback as per institute norms.

COURSE POLICY (preferred mode of correspondence with students, compensation assessment policy to be specified)

MODE OF CORRESPONDENCE (email/ phone etc)
Email (ksp@nitt.edu)

COMPENSATION ASSESSMENT POLICY
One compensation written test will be conducted for 20 marks only for written tests.

ATTENDANCE POLICY (A uniform attendance policy as specified below shall be followed)

- **At least 75% attendance in each course is mandatory.**
- **A maximum of 10% shall be allowed under On Duty (OD) category.**
- Students with **less than 65% of attendance** shall be prevented from writing the final assessment and **shall be awarded 'V' grade.**

ACADEMIC DISHONESTY & PLAGIARISM

- Possessing a mobile phone, carrying bits of paper, talking to other students, copying from others during an assessment will be treated as punishable dishonesty.
- Zero mark to be awarded for the offenders. For copying from another student, both students get the same penalty of zero mark.
- The departmental disciplinary committee including the course faculty member, PAC chairperson and the HoD, as members shall verify the facts of the malpractice and award the punishment if the student is found guilty. The report shall be submitted to the Academic office.

  The above policy against academic dishonesty shall be applicable for all the programmes.

ADDITIONAL INFORMATION

Only one compensation test would be conducted against missing one of the assessments from Sl.No.1 to 4 only.

FOR APPROVAL

Course Faculty 13.01.2020 **CC-Chairperson** _____ **HOD** _____

Guidelines:

a) The number of assessments for a course shall range from 4 to 6.

b) **Every course shall have a final assessment on the entire syllabus with at least 30% weightage.**

c) **One compensation assessment for absentees in assessments (other than final assessment) is mandatory. Only genuine cases of absence shall be considered.**

d) **The passing minimum shall be as per the regulations.**

B.Tech. Admitted in				P.G.
2018	2017	2016	2015	
35% or class average/2 whichever is greater.		Peak/3 or class average/2 whichever is lower		40%

e) **Attendance policy and the policy on academic dishonesty & plagiarism by students are uniform for all the courses.**

f) **Absolute grading policy shall be incorporated if the number of students per course is less than 10.**

g) Necessary care shall be taken to ensure that the course plan is reasonable and is objective.