

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

<b>COURSE PLAN – PART I</b>			
<b>Name of the programme and specialization</b>	<b>M.Tech.</b>		
<b>Course Title</b>	<b>Welding Application Technology</b>		
<b>Course Code</b>	<b>MT626</b>	<b>No. of Credits</b>	<b>3</b>
<b>Course Code of Pre-requisite subject(s)</b>	---		
<b>Session</b>	<b>Jan. – June 2020</b>	<b>Section (if, applicable)</b>	<b>NA</b>
<b>Name of Faculty</b>	<b>Dr K Sivaprasad</b>	<b>Department</b>	<b>MME</b>
<b>Email</b>	<b>ksp@nitt.edu</b>	<b>Telephone No.</b>	<b>0431-2503466</b>
<b>Name of Course coordinator(s) (if, applicable)</b>	<b>NA</b>		
<b>E-mail</b>	---	<b>Telephone No.</b>	---
<b>Course Type</b>	<input type="checkbox"/> <b>Core course</b>	<input checked="" type="checkbox"/> <b>Elective course</b>	
<b>Syllabus (approved in BoS)</b>			
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			
<b>COURSE OBJECTIVES</b>			
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			

<b>COURSE OUTCOMES (CO)</b>	
<b>Course Outcomes</b>	<b>Aligned Programme Outcomes (PO)</b>
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]

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

7	7 <sup>th</sup> week	use of automatic welding and systems in automobile industry, automation	Chalk & talk and PPT
8	8 <sup>th</sup> week	Oil and gas industry, materials, processes	Chalk & talk and PPT
9	9 <sup>th</sup> week	fabrication, inspection and testing	Chalk & talk and PPT
10	10 <sup>th</sup> week	case studies, recent trends and developments	Chalk & talk and PPT
11	11 <sup>th</sup> week	Materials, processes, fabrication in nuclear industry	Chalk & talk and PPT
12	12 <sup>th</sup> week	inspection and testing in nuclear industry; comparison with other industries	Chalk & talk and PPT
13	13 <sup>th</sup> 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	5 <sup>th</sup> week	1 hr	20
2	Written test 2	10 <sup>th</sup> week	1 hr	20
3	Presentations	12-14 <sup>th</sup> weeks	2 weeks	10
CPA	Compensation Assessment*	15 <sup>th</sup> week	1 hr	20
4	Final Assessment *	16 <sup>th</sup> 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**

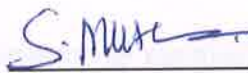
**Only one compensation test would be conducted against missing one of the assessments from SI.No.1 to 4 only.**

**FOR APPROVAL**

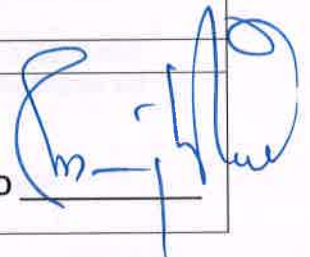
Course Faculty

  
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.