DEPARTMENT OF METALLURGICAL AND MATERIALS ENGINEERING

NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

COURSE PLAN – PART I			
Name of the programme and specialization	**M.TECH. WELDING ENGINEERING**		
Course Title	**Welding Laboratory**		
Course Code	**MT630**	**No. of Credits**	**2**
Course Code of Pre-requisite subject(s)	**Nil**		
Session	**Jan 2023**	**Section (if, applicable)**	**NA**
Name of Faculty	**Dr. A. Muthuchamy**	**Department**	**MME**
Email	**muthuchamy@nitt.edu**	**Telephone No.**	**9445939319**
Name of Course Coordinator(s) (if, applicable)	**NA**		
E-mail		**Telephone No.**	
Course Type	✓ **Core course**	☐ **Elective course**	

List of Experiments (approved in BoS)

Arc striking practice. Bead-on-platewelding. Effect of welding parameters on weld bead by¬GTAwelding ¬GMAwelding ¬Submerged arcwelding. Microstructural observation of weldments¬Carbonsteel ¬Stainless steel ¬Aluminium alloy ¬Titaniumalloy ¬Dissimilarjoint. Practice for preparation of welding procedure specification. Practice for preparation of procedure qualification record.

COURSE OBJECTIVES

To gain knowledge on practical aspects of different welding processes and able to apply them for various engineering applications.

COURSE OUTCOMES (CO)

Course Outcomes	**Aligned Programme Outcomes (PO)**
At the end of the course student will be able to:	
1. Select process parameters by bead on platetrial	**1, 2, 3, 4**
2. Gain knowledge in practical aspects of GTAW, GMAW, SAW	**6, 7, 10, 12**
3. Gain knowledge on welding of carbon steel, stainless steel, aluminum, titanium and dissimilarjoints	**10, 12**
4. To carryout recommend testing techniques for weldedjoints	**2, 3, 6, 7**

COURSE PLAN – PART II

COURSE OVERVIEW

The course discuss in detail about the practical aspects of different welding processes and their various engineering applications.

COURSE TEACHING AND LEARNING ACTIVITIES

S.No.	**Week/Contact Hours**	**Topic**	**Mode of Delivery**

1	I-III	Arc striking practice. Bead-on-platewelding.	Lectures + animated/real videos
2	IV-VI	Process parameter studies by bead on plate trials TIG, MIG, SAW	
3	VII-IX	Microstructural observation of weldments¬Carbonsteel ¬Stainless steel ¬Aluminium alloy ¬Titaniumalloy	
4	X-XI	Dissimilar joints	
5	XII-XIII	Practice for preparation of welding procedure specification. Practice for preparation of procedure qualification record.	

COURSE ASSESSMENT METHODS (shall range from 4 to 6)

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Technical presentation	Feb 3rd to March 26th	30	30
2	Quiz	March 29th	20	20
3	Lab records	2nd week of April	--	20
CPA	Compensation Assessment	XIII	60	20
4	Final Viva-voce	XV	120	30

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

The exit survey will be assessed based on the questionnaire prepared by the class teacher and expected attainment is 75% on 1-10 scale basis

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

MODE OF CORRESPONDENCE (email/ phone etc)

Email/Mobile

COMPENSATION ASSESSMENT POLICY

It will be given during XIII week for those who are absent on genuine grounds for any one of the Cycle Tests.

ATTENDANCE POLICY Institute guidelines will be followed for attendance

ADDITIONAL INFORMATION

The Course faculty is available for consultation at any time. Students can also contact him at any time through phone call or by mail.

FOR APPROVAL

Course Faculty	CC-Chairperson	HOD
Dr. A. Muthuchamy	31-01-2023 Dr. Katakam Siva Prasad	Prof. S. Muthukumaran