



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

COURSE PLAN – PART I			
Name of the programme and specialization	M.Tech - Industrial Metallurgy		
Course Title	Advanced Materials Processing Laboratory		
Course Code	MT 660	No. of Credits	2
Course Code of Pre-requisite subject(s)	Nil		
Session	January 2020	Section (if, applicable)	NA
Name of Faculty	Dr.K.Sivaprasad	Department	MME
Official Email	ksp@nitt.edu	Telephone No.	0431 2503466
Name of Course Coordinator(s)	NA		
Official E-mail	NA	Telephone No.	NA
Course Type	Core (M.Tech. lab course)		
Syllabus (approved in BoS)			
<ol style="list-style-type: none"> 1. Plasma electrolytic oxidation 2. Mechano chemical synthesis of nano structured hydroxyapatite compound 3. Study of microwave synthesis of hydroxyapatite 4. Diffusion bonding process 5. Equal channel-angular processing (ECAP) 6. Cryo rolling of materials 7. Vacuum arc melting of materials 8. Spark plasma sintering 9. Microwave sintering of materials 10. In-situ synthesis of metal matrix composites by casting 			
COURSE OBJECTIVES			
The objective of this laboratory course is to provide an insight for the latest developments in materials processing.			
MAPPING OF COs with POs			
Course Outcomes	Programme Outcomes (PO)		
1. After the completion of this course, the student will be able to Understands the working principles of different advanced processes	[1]		
2. Synthesize nanostructured materials by advanced processing methods	[1,4,7]		
3. Perform experiments with best practices and understands the advantages and limitations of different processes	[2,6]		



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4. Interpret and analyze the data and present the results in a concise written format	[3,5]
5. Recommend a suitable process for modifying the material properties	[1,6]

COURSE PLAN – PART II				
COURSE OVERVIEW				
The objective of this laboratory course is to provide an insight for the latest developments in materials processing.				
COURSE TEACHING AND LEARNING ACTIVITIES				(Add more rows)
S.No.	Week/Contact Hours	Topic	Mode of Delivery	
1	1-2 weeks	Plasma electrolytic oxidation	Demonstrating facilities + Experimental procedure + Exposure to the facilities available at NITT/Research Labs	
2	3 rd week	Mechano chemical synthesis of nano structured hydroxyapatite compound		
3	4 th week	Study of microwave synthesis of hydroxyapatite		
4	5 th week	Diffusion bonding process		
5	6 th week	Equal channel-angular processing (ECAP)		
6	7 th week	Cryo rolling of materials		
7	8,9 th week	Vacuum arc melting of materials		
8	10 th week	Spark plasma sintering		
9	11 th week	Microwave sintering of materials		
10	12,13 th week	In-situ synthesis of metal matrix composites by casting		
COURSE ASSESSMENT METHODS (shall range from 4 to 6)				
S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Laboratory Records (Internal)	1-13 week	Weekly 3 hrs	75
2	Final Assessment * Practical+Viva+Exam (External)	14 th week	2 hour	25
*mandatory; refer to guidelines on page 4				
COURSE EXIT SURVEY (mention the ways in which the feedback about the course shall be assessed)				



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The feedback from students will be assessed based on the questionnaire prepared by the Institute and expected attainment to be 75%.

COURSE POLICY (including compensation assessment to be specified)

The students are expected to attend all the classes except for medical reasons. Minimum attendance of 75% is required for writing the semester examination.

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, IF ANY

The course coordinator is available for consultation at any time. Students can contact me at any time though phone or e-mail.

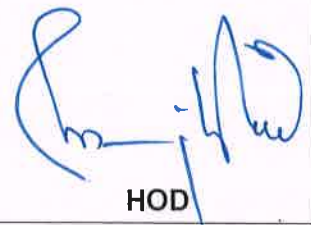
FOR APPROVAL


13.01.2020

Course Faculty



CC-Chairperson



HOD