

DEPARTMENT OF METALLURGICAL AND MATERIALS ENGINEERING

NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

COURSE PLAN – PART I			
Course Title	Metallic Materials		
Course Code	MT 656	No. of Credits	03
Course Code of Pre-requisite subject(s)	NIL		
Session	Jan 2018	Section (if, applicable)	NA
Name of Faculty	K Sivaprasad	Department	MME
Email	ksp@nitt.edu	Tel. No.	9444192278
Name of Course Coordinator(s) (if, applicable)	NA		
E-mail	NA	Telephone No.	NA
Course Type	Compulsory Course		
Syllabus (approved in BoS)			
Refer : https://www.nitt.edu/home/academics/curriculum/MTech-MGE-2015.pdf - Page No 11			
COURSE OBJECTIVES			
Understand the basics of metallic materials- classifications, their properties and applications			
COURSE OUTCOMES (CO)			
Course Outcomes	Aligned Programme Outcomes (PO)		
1. Understand different types of special steels and cast-irons	[1]		
2. Understand the structure and properties of nonferrous metals and alloys	[1, 4, 6]		
3. Identify the phases present in different alloy systems by analyzing the phase diagrams	[1, 4, 5, 6]		
4. Apply the basic principles of ferrous and non-ferrous physical metallurgy for selecting materials for specific applications.	[1, 2, 6]		

COURSE PLAN – PART II			
COURSE OVERVIEW			
The course covers about various types of special steels and cast irons and their application			
COURSE TEACHING AND LEARNING ACTIVITIES			
S.No.	Weeks	Topic	Mode of Delivery
1	I-III	Ferrous metals and alloys-Introduction to specifications – types of steels, alloy steels, tool steels; stainless steels, HSLA, TRIP steels, TWIP steels. Types of cast irons – compositions, properties and applications, specific heat treatment	Chalk and Talk (Occasionally PPT to show microstructures etc.)
2	IV-VI	Aluminium and its alloys; physical chemical and mechanical properties, classifications, heat treatable and non-heat treatable types - structural features corrosion behaviour; and other methods of corrosion protection. Copper and its alloys, electrical conductivity as influenced by other elements, alloys for high conductivity.	
3	VII-IX	Titanium and its alloys, physical, chemical and mechanical properties of titanium, effect of other elements on its properties, types of titanium alloys.	

		microstructural features, properties and applications	
4	X-XI	Magnesium and its alloys; structure, properties and applications of magnesium and some of its alloys; metallurgy of magnesium castings	
5	XII-XIII	Lead, tin, zinc, antimony, silver, gold and platinum alloys, relevant phase diagrams and microstructural features, properties and applications.	

COURSE ASSESSMENT METHODS (shall range from 4 to 6)

S.No.	Mode of Assessment	Week/Date	Duration (min)	% Weightage
1	Written Assessment - 1	IV	45	20
2	Written Assessment - 2	VII	45	20
3	Assignment	VIII	---	10
4	End semester Examination	XIII	180	50

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, policy on attendance, compensation assessment, academic honesty and plagiarism etc.)

MODE OF CORRESPONDENCE (email/ phone etc)

Email: ksp@nitt.edu Phone : 3466 (intercom)

ATTENDANCE

Minimum 75% excluding ODs. Medical certificate for genuine cases is permitted

COMPENSATION ASSESSMENT

It will be given in XI week of the course for those who are absent for either Written Assessment 1 or 2 only that too on genuine grounds.

ACADEMIC HONESTY & PLAGIARISM

Plagiarism will be checked for Assignments.

ADDITIONAL INFORMATION

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

FOR APPROVAL


Course Faculty _____
(K. Sivaprasad)

CC-Chairperson 
(Dr.S.Muthukumaran)

HOD 
(Prof.V.Muthupandi)