NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

COURSE OUTLINE TEMPLATE			
Course Title	**INTRODUCTION TO METALLURGICAL AND MATERIALS ENGINEERING**		
Course Code	**MTIR 15**	**No. of Credits**	**TWO**
Department	**MME**	**Faculty**	Prof S Raman Sankaranarayanan
Pre-requisites Course Code	**NIL; (**Standing as student of BTech MME first year is sufficient**)**		
Course Coordinator(s) (if, applicable)	**Cited faculty is the course coordinator.** (In case of any contingency, the HoD MME shall assign a course coordinator.)		
Course Teacher E-mail	**SRS:** raman@nitt.edu	**Telephone No.**	**98947 02353**; (0431) 2503450
Course Type	☐ **Core course**		

COURSE OVERVIEW

To provide an introduction to the contents of the BTech MME programme; to provide an insight into the activities of this department; to provide an introduction to metals and materials; To present a historical perspective on how materials have evolved; to present an overview of the metals and materials industry; to offer examples / case studies on recent developments in materials;

(Detailed syllabus provided in the NITT website)

(earlier listed as BS 102 for BTech MME)

COURSE OBJECTIVES

To become familiar with the contents of the BTech (MME) programme;
to become familiar with the metals and materials industry;
to become familiar with the developments in metals and materials;

COURSE OUTCOMES (CO)

Course Outcomes	Aligned Programme Outcomes (PO)
1. Become familiar with the science behind the development of metals and materials; 2. Become familiar with current trends / developments and the prevailing industrial scenario in metals and materials;	**PO 1** **PO 8 and PO 10**

COURSE TEACHING AND LEARNING ACTIVITIES

S.No.	Week (two lectures per week)	Indicative Topic/s	Mode of Delivery
1	Week 1	Introduction to the BTech MME programme; Introduction to the Dept. MME NITT;	Chalk and Talk (CT)
2	Week 2	Introduction to the ongoing research and consulting activities of this dept	CT
3	Weeks 3, 4	Concept of engineering materials; classification of engineering materials; engineering properties; input on metals, ceramics, polymers and composites; and other emerging materials; design and selection of materials	CT
4	Weeks 5, 6, 7	Historical evolution in the domain of metals and materials; Skills and achievements of ancient India – with examples such as ancient metal production routes, Damascus sword, Delhi iron pillar, metal mirrors, metals in traditional Indian medicines;	CT, with soft copy links (as handouts, for further reading)
5	Weeks 8, 9, 10, 11	Present industrial scenario in metals and materials; Indian and international context; prominent companies in related areas; discussion on trends in materials development; examples such as foundry, steel industry, aero materials,	CT, with soft copy links (as handouts, for further reading)

6	Week 12	semiconductor materials, nano materials, bio materials; issues related to production of metals and materials; Miscellaneous topics, need based; make up classes, need based; <u>Note</u>: (a) Efforts will be made to organize two lectures by experts – possibly one from industry and one from the academia, subject to due official approvals; (b) Efforts will be made to organize one industrial visit, subject to due official approvals	CT

COURSE ASSESSMENT METHODS (total hundred marks; grading on relative basis)

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Two Cycle Tests	Vide common schedule	One hour each	Twenty marks each
2	Assignments	Will be announced in class	Students may need total of ten hours	Ten marks
3	End semester / final exam	Vide common schedule	Two hours	Fifty marks

ESSENTIAL READINGS : Textbooks, reference books Website addresses, journals, etc

- As cited in the detailed syllabus in web site –
- Further guidance will be provided during discussion in the class -

COURSE EXIT SURVEY (mention the ways in which the feedback about the course is assessed and indicate the attainment also)
Using feedback form/s, seeking input on the design, delivery and utility of this course
COURSE POLICY (including plagiarism, academic honesty, attendance, etc.)
Students expected to use fair means during tests and exams; students expected to attend all classes and contribute to discussion in the class room; attendance requirements, as specified in prevailing academic rules and regulations;
ADDITIONAL COURSE INFORMATION
The teacher can be reached through mobile phone / email. IN CASE of need for extended discussion (say more than fifteen minutes), students advised to schedule an appointment with the teacher.
FOR SENATE'S CONSIDERATION
Course Faculty MME: SRS; CC-Chairperson ; HOD (MME: SPKB) Aug. 3, 2016