DEPARTMENT OF MECHANICAL ENGINEERING

NATIONAL INSTITUTE OF TECHNOLOGY : TIRUCHIRAPPALLI

Course Plan : MELR 14 for Section - A (Session 2017-18)

Course Title	**Heat Transfer and Refrigeration & Air-Conditioning Lab**			
Course Code	**MELR14**		**No. of Credits**	**2 (Practical)**
Department	**Mechanical**		**Faculty**	**Prof. M. Shahul Hameed**
Programme	**B.Tech. (Mechanical, III Year)**			
Pre-requisites Course Code	**1. MEPC 22 - Heat and Mass Transfer** **2. MEPE15 - Refrigeration & Air-Conditioning**			
Course Coordinator(s) (if, applicable)				
E-mail	**Hameed@nitt.edu**		**Telephone No.**	**+91-431-2503414(O)** **+91-9677579292(M)**
Course Type	✓	**Core course**	**Elective course**	

This course is offered to III year B.Tech.(Mechanical) students. This course has 2 credits.. Two practical classes (3 hours duration each) will be conducted per week.

I. To develop an intuitive understanding of heat transfer and its mechanisms
II. To make the students understand the principle & mechanisms of Refrigeration & Air-Conditioning.

- Students will become familiar with:
  I. Mechanisms of each mode of heat transfer and its applications.
  II. Practical understanding by emphasization of the physical Phenomena involved.
  III. Principle and mechanisms behind working of Refrigeration and Air-conditioning and Human comfort conditions.

S.NO	Week	Topic	Mode of Delivery
1.	II week of July	Introductory session covering all basic concepts and working principles of various heat transfer equipment and refrigeration concepts	C&T, PPT
2.	III Week of July to IV week of October	Experiments on Concentric tube heat exchanger Unsteady heat transfer unit Emissivity apparatus Pin fin apparatus Heat conduction through composite wall Vapour Compression refrigeration system Bench top cooling tower Air-conditioning tutor.	

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
Practical				
1	Practical class	Monday & Thursday per week for a total of 4 months	3 hour per week for each batch	75%
2	End semester	II week of November, 2017	1 Hour written exam	25%
				Total : 100

1. Frank P. Incropera & David P. Dewitt, " Fundamentals of Heat and Mass Transfer", Fifth Edition, John Wiley & sons Publications.
2. Yunus A Cengel, "Heat Transfer - A Practical Approach", Fifth Edition, McGraw Hill Publications.
3. C P Arora, "Refrigeration and Air Conditioning", Third Edition, Tata McGraw Hill Publications.

[redacted]

1. Feedback from students during class committee meetings.
2. Anonymous feedback through questionnaire at the end of the semester.

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1. 75% attendance is compulsory for practical component.
2. For those who missed practical classes due to genuine reasons, extra practical classes will be conducted during the I week of November 2017. This extra lab class will not be considered for attendance.

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The faculty will be available for consultation at times as per the intimation by the faculty.

Faculty _____ **CC-Chairperson** _____ **HOD** _____ 16/8/2017