



**DEPARTMENT OF CHEMICAL ENGINEERING  
NATIONAL INSTITUTE OF TECHNOLOGY,  
TIRUCHIRAPPALLI**

COURSE PLAN – PART I			
Name of the programme and specialization	B.Tech (Chemical Engineering)		
Course Title	HEAT TRANSFER LABORATORY		
Course Code	CLLR12	No. of Credits	2
Course Code of Co-requisite subject(s)	CLPC12		
Session	July 2023	Section (if, applicable)	NA
Name of Faculty	Dr. G. Arthanareeswaran / Dr K Sankar/ Ms Manonmani S	Department	Chemical Engineering
Email	<a href="mailto:arthanareeg@nitt.edu">arthanareeg@nitt.edu</a> / <a href="mailto:shankark@nitt.edu">shankark@nitt.edu</a> / <a href="mailto:402121053@nitt.edu">402121053@nitt.edu</a>	Teleph one No.	04312503108 / 4312503118
Name of Course Coordinator	Dr. M. Arivazhagan		
E-mail	<a href="mailto:hodchl@nitt.edu">hodchl@nitt.edu</a>	Telephone No.	0431-2503101
Course Type	<input type="checkbox"/> Core course	<input type="checkbox"/> Elective course	<input checked="" type="checkbox"/> ELR
<b>List of Experiments</b>			
1. Temperature profile 2. Natural convection 3. Heat transfer through lagged pipe 4. Stefan Boltzmann Constant 5. Two-Phase Heat flow 6. Dropwise and Filmwise condensation 7. Heat transfer of helical coil-type heat exchangers 8. Emissivity – Heat Transfer by Radiation 9. Newton’s Law of Cooling <b>REFERENCE BOOKS</b> 1. Heat transfer laboratory manual 2. <a href="https://vlab.amrita.edu">https://vlab.amrita.edu</a>			
<b>COURSE OBJECTIVES</b>			
To provide experience on testing, and analysis of heat transfer concepts and heat transfer equipments			



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<b>COURSE OUTCOMES (CO)</b>				
<b>Course Outcomes</b>		<b>Aligned Programme Outcomes (PO)</b>		
1. Able to verify the basis learnt in theory and also evaluate the performance of heat transfer equipment.		PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12		
<b>COURSE PLAN – PART II</b>				
<b>COURSE OVERVIEW</b>				
Heat transfer laboratory aims to provide experimental knowledge on basic operation and principles of heat transfer equipments. Students will be able to test and analyze the concepts of natural conduction, convection and radiation phenomena through experiments.				
<b>COURSE TEACHING AND LEARNING ACTIVITIES</b>				
<b>S.No.</b>	<b>Week /Contact Hours</b>	<b>Topic</b>	<b>Mode of Delivery</b>	
1.	1 <sup>st</sup> week	Temperature profile	Manual experiment	
2.	2 <sup>nd</sup> week	Natural convection	Manual experiment	
3.	3 <sup>rd</sup> week	Heat transfer through lagged pipe	Manual experiment	
4.	4 <sup>th</sup> week	Stefan Boltzmann Constant	Manual experiment	
5.	5 <sup>th</sup> week	Two-Phase Heat flow	Manual experiment	
6.	6 <sup>th</sup> week	Dropwise and Filmwise condensation	Manual experiment	
7.	7 <sup>th</sup> week	Heat transfer of helical coil-type heat exchangers	Manual experiment	
8.	8 <sup>th</sup> week	Emissivity – Heat Transfer by Radiation	Simulation based experiment	
9.	9 <sup>th</sup> week	Newton's Law of Cooling	Simulation based experiment	
10.	10 <sup>th</sup> week	Redo Experiments for absentee	Manual and Simulation based experiment	
<b>COURSE ASSESSMENT METHODS (shall range from 4 to 6)</b>				
<b>S.No.</b>	<b>Mode of Assessment</b>	<b>Week/Date</b>	<b>Duration</b>	<b>% Weightage</b>
1	Continuous Assessment will be done for all experiments			50
2	Viva-voce or Written examination			20
	Compensation Assessment*	Not applicable		NIL
3	Final Assessment *	As per the institute schedule		30
<b>*mandatory; refer to guidelines on page 4</b>				
<b>COURSE EXIT SURVEY (mention the ways in which the feedback about the course shall be assessed)</b>				
Feedback from students at the end of each assessment				



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**COURSE POLICY** (preferred mode of correspondence with students, policy on attendance, compensation assessment, academic honesty and plagiarism etc.)

**ATTENDANCE** (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.

**COMPENSATION**

**Redo classes** will be conducted whoever absent or failed to do the experiments properly

**ACADEMIC HONESTY & PLAGIARISM**

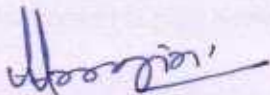
In the examination no modern gadgets like smart phones are allowed. Severe action will be taken against those found indulge in doing mal-practice of any form.

**ADDITIONAL INFORMATION, IF ANY**

The passing minimum shall be as per the regulations

**FOR APPROVAL**

Course Faculty:  /  /  Ms Manonmani S

CC- Chairperson  Dr A Arunagiri

HOD  Dr M Arivazhagan



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**Guidelines:**

- a. The number of assessments for a course shall range from 4 to 6.
- b. Every course shall have a final assessment on the entire syllabus with at least 30% weightage.
- c. A student **must score a minimum of 20% in the final assessment** (for all courses) to complete the course.
- d. One compensation assessment for absentees in assessments (other than final assessment) is mandatory. Only genuine cases of absence shall be considered.
- e. The passing minimum shall be as per the regulations.

B.Tech. Admitted in				P.G.
2018	2017	2016	2015	
35% or class average/2 whichever is greater.		Peak/3 or class average/2 whichever is lower		40%

- f. Attendance policy and the policy on academic dishonesty & plagiarism by students are uniform for all the courses.
- g. Absolute grading policy shall be incorporated if the number of students per course is less than 10.

Necessary care shall be taken to ensure that the course plan is reasonable and is objective.