



NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

DEPARTMENT OF CHEMICAL ENGINEERING

NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

COURSE PLAN – PART I						
Name of the programme and specialization	B.Tech and CHEMICAL ENGINEERING					
Course Title	HEAT TRANSFER LABORATORY					
Course Code	CLLR14	No. of Credits	L	T	P	C
			0	0	2	2
Course Code of Pre-requisite subject(s)	CLPC 21					
Session	JAN 20202	Section (if, applicable)	NA			
Name of Faculty	Dr.P.KALAIHELVI Dr.G.ARTHANAREESWARAN	Department	CHEMICAL ENGINEERING			
Email	<a href="mailto:kalai@nitt.edu">kalai@nitt.edu</a> , <a href="mailto:arthanareeg@nitt.edu">arthanareeg@nitt.edu</a>	Telephone No.	04312503110/			
Name of Course Coordinator	Dr. K.M.MEERA SHERIFFA BEGUM					
E-mail	<a href="mailto:meera@nitt.edu">meera@nitt.edu</a>	Telephone No.	04312503109 04312503118			
Course Type	Core					
<b>Syllabus (approved in BoS)</b>						
1. Natural convection 2. Temperature profile 3. Emissivity apparatus 4. Pin fin apparatus 5. Transient heat conduction 6. Stefan Boltzmann constant 7. Thermal conductivity of insulating powder 8. Drop and Film wise condensation 9. Two phase heat flow set up REFERENCE BOOK 1. Heat transfer laboratory manual						
<b>COURSE OBJECTIVES</b>						
1. able to verify the basis learnt in theory and also to evaluate the performance of heat transfer equipment.						
<b>COURSE OUTCOMES (CO)</b>						
Course Outcome	Aligned Programme Outcomes (PO)					
able to estimate steady state and transient heat transfer rates from/to object such as tanks, pipes, building etc	1,2,5,6,7,8,9,10,11,12					



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## COURSE PLAN – PART II

### COURSE OVERVIEW

This course will provide experience on testing, and analysis of heat transfer concepts and heat transfer equipment

### COURSE TEACHING AND LEARNING ACTIVITIES

S. No	Week/Contact Hours	Topic	Mode of Delivery
1.	Week 1	Introduction about Heat Transfer lab experiments and evaluation Procedure.	Chalk and Talk
2.	Week 2	Presentation by the students in batches about the their first experiments	Chalk and Talk
3.	Week 3	Natural convection	Experiment will be carried out by the student
4.	Week 4	Temperature profile	Experiment will be carried out by the student
5.	Week 5	Emissivity apparatus	Experiment will be carried out by the student
6.	Week 6	Pin fin apparatus	Experiment will be carried out by the student
7.	Week 7	Transient heat conduction	Experiment will be carried out by the student
8.	Week 8	Stefan Boltzmann constant	Experiment will be carried out by the student
9.	Week 9	Thermal conductivity of insulating powder	Experiment will be carried out by the student
10.	Week 10	Drop and Film wise condensation	Experiment will be carried out by the student
11.	Week 11	Two phase heat flow set up	Experiment will be carried out by the student
12.	Week 12	Compensation lab	Not more than one experiment
		<b>Final Assessment</b>	

### COURSE ASSESSMENT METHODS (shall range from 4 to 6)

S. No	Mode of Assessment	Week/Date	Duration	% Weightage
1	Internal Assessment	Every week during the lab hours	During lab hours	50
2	Practical Lab examination	After 12 <sup>th</sup> Week	2 hours exam	30
3	Viva Voce examination	After practical examination	1 hour	20

\*mandatory; refer to guidelines on page 4



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## **COURSE EXIT SURVEY (mention the ways in which the feedback about the course shall be assessed)**

1. Feedback is planned to be collected thrice; At class committee meetings during the assessment period and one at the end of course as soon as classes are over.
2. The academic performance of the students will be assessed based on **Two** assessments: Internal during the lab (50 marks) and final assessment for lab and viva (50 marks) at the end of course.

Suitable mapping of COs with POs will be made and attainment will be calculated.

## **COURSE POLICY (preferred mode of correspondence with students, compensation assessment policy to be specified)**

### **MODE OF CORRESPONDENCE (email/ phone etc)**

Email : [kalai@nitt.edu](mailto:kalai@nitt.edu), [arthanareeg@nitt.edu](mailto:arthanareeg@nitt.edu)

### **COMPENSATION ASSESSMENT POLICY**

**One Compensation assessment** will be conducted only for absentees in either the Assessments under Medical or Institute related activities and also only for one experiment.

## **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**

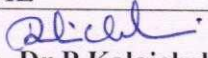
- Possessing a mobile phone, carrying bits of paper, talking to other students, copying from others during an assessment will be treated as punishable dishonesty.
- Zero mark to be awarded for the offenders. For copying from another student, both students get the same penalty of zero mark.
- The departmental 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.

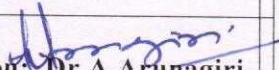
The above policy against academic dishonesty shall be applicable for all the programmes.

## **ADDITIONAL INFORMATION**

The Course Coordinator is available for consultation and Queries may also be emailed to the Course Coordinator directly at [kalai@nitt.edu](mailto:kalai@nitt.edu) and [arthanareeg@nitt.edu](mailto:arthanareeg@nitt.edu)

## **FOR APPROVAL**

Course Faculty:  Dr.P.Kalaichelvi

CC-Chairperson:  Dr.A.Arunagiri

Dr.G.ARTHANAREESWARAN

  
HOD: Dr.K.M.Meera S. Begum

(Approved by CC Chairman and HOD)



**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. **One compensation assessment for absentees in assessments (other than final assessment) is mandatory. Only genuine cases of absence shall be considered.**
- d. **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%

- e. Attendance policy and the policy on academic dishonesty & plagiarism by students are uniform for all the courses.
- f. **Absolute grading policy shall be incorporated if the number of students per course is less than 10.**
- g. Necessary care shall be taken to ensure that the course plan is reasonable and is objective.