



**NATIONAL INSTITUTE OF TECHNOLOGY,  
TIRUCHIRAPPALLI**

**DEPARTMENT OF CHEMISTRY**

COURSE PLAN - PART I			
<b>Name of the programme and specialization</b>	B.Tech. I (Computer Science and Engineering)		
<b>Course Title</b>	Chemistry Lab		
<b>Course Code</b>	CHIR12	<b>No. of Credits</b>	2
<b>Course Code of Pre-requisite subject(s)</b>	Nil		
<b>Session</b>	January 2021	<b>Section (if, applicable)</b>	A
<b>Name of Faculty</b>	Dr. Sunandan Sarkar	<b>Department</b>	Chemistry
<b>Official Email</b>	<a href="mailto:ssarkar@nitt.edu">ssarkar@nitt.edu</a>	<b>Telephone No.</b>	9153484492
<b>Name of Course Coordinator(s) (if, applicable)</b>			
<b>Official E-mail</b>		<b>Telephone No.</b>	
<b>Course Type</b> (please tick appropriately)	<input checked="" type="checkbox"/> Core course	<input type="checkbox"/> Elective course	
<b>Syllabus (approved in BoS)</b>			
<b>LIST OF EXPERIMENTS</b>			
1. Estimation of carbonate, non-carbonate and total hardness in the given water sample. 2. Estimation of dissolved oxygen in the given water sample. 3. Determination of the percentage of Fe in the given steel sample. 4. Estimation of Fe <sup>3+</sup> by spectrophotometer. 5. Corrosion rate by polarization technique 6. Conductometric titration 7. Potentiometric titration 8. pH-metric titration 9. Percentage purity of bleaching powder 10. Determination of molecular weight of the polymer by Viscometry 11. Study of three component system. 12. Demonstration experiments using Advanced Spectroscopic Techniques, (UV-Vis, FTIR, Raman)			
<b>Reference Books</b>			
1. Laboratory Manual, Department of Chemistry, National Institute of Technology, Tiruchirappalli. 2. S.K. Bhasin, S. Rani, Laboratory Manual on Engineering Chemistry, Dhanpat Rai Publishing Company, New Delhi, 2011.			
<b>COURSE OBJECTIVES</b>			
To introduce the students about the experiments on (i) estimation of total hardness and (ii) dissolved oxygen in the given sample, (iii) determination of the percentage of Fe in the given			



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steel sample, (iv) estimation of Fe<sup>3+</sup> by spectrophotometer, (v) corrosion rate by polarization technique, (vi) conductometric, (vii) potentiometric, (viii) pH-metric titration, (ix) determination of percentage purity of bleaching powder, (x) determination of molecular weight of the polymer by Viscometry.

### MAPPING OF COs with POs

Course Outcomes	Programme Outcomes (PO) (Enter Numbers only)
1. The chemistry laboratory course will consist of experiments illustrating the principles of chemistry relevant to the study of science and engineering.	
2. The students will learn how to estimate various components from the corresponding bulk mixture.	

### COURSE PLAN – PART II

#### COURSE OVERVIEW

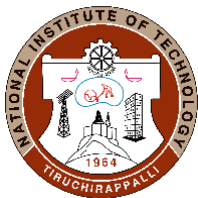
This course is offered to first year B.Tech. (**Computer Science and Engineering**) students. This is a 2 credit practical course and one practical class will be conducted per week (3 hr duration).

#### COURSE TEACHING AND LEARNING ACTIVITIES

( Add more rows)

S.No.	Week/Contact Hours	Topic	Mode of Delivery
1	III week of April	1. Estimation of carbonate, non-carbonate and total hardness in the given water sample.	Virtual
2	IV week of April	2. Estimation of dissolved oxygen in the given water sample.	Virtual
3	I week of May	3. Determination of the percentage of Fe in the given steel sample.	Virtual
4	II week of May	4. Estimation of Fe <sup>3+</sup> by spectrophotometer.	Virtual
5	III week of May	5. Corrosion rate by polarization technique	Virtual
6	IV week of May	6. Conductometric titration	Virtual
7	I week of June	7. Potentiometric titration	Virtual
8	II week of June	8. pH-metric titration	Virtual
9	III week of June	9. Percentage purity of bleaching powder	Virtual
10	IV week of June	10. Determination of molecular weight of the polymer by Viscometry	Virtual
11	I week of July	Compensation lab	Virtual

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



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S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Based on individual lab experiments	Each Week	3 hours	75 %
2	Final Assessment *	II week of July	2 hours	25 %

**\*mandatory; refer to guidelines on page 4**

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

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

**COURSE POLICY** (including compensation assessment to be specified)

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

**ssarkar@nitt.edu; Tel. No.:9153484492**

**COMPENSATION ASSESSMENT POLICY**

- 1. This is for those students who missed one/two lab due to genuine reasons.**
- 2. Compensation lab will be conducted during the II/III week of November.**

**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.



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

**ADDITIONAL INFORMATION, IF ANY**

**FOR APPROVAL**

Dr. Sunandan Sarkar

*S. Sarkar*

Course Faculty \_\_\_\_\_

CC- Chairperson \_\_\_\_\_

HOD \_\_\_\_\_

*[Signature]*

*[Signature]*



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## Guidelines

- The number of assessments for any theory course shall range from 4 to 6.
- Every theory course shall have a final assessment on the entire syllabus with at least 30% weightage.
- One compensation assessment for absentees in assessments (other than final assessment) is mandatory. Only genuine cases of absence shall be considered.
- 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%

- Attendance policy and the policy on academic dishonesty & plagiarism by students are uniform for all the courses.
- 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.