NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

DEPARTMENT OF CHEMISTRY

COURSE PLAN – PART I			
Name of the programme and specialization	**B. Tech. (ECE B)**		
Course Title	**Chemistry (Lab)**		
Course Code	**CHIR12**	**No. of Credits**	**2**
Course Code of Pre-requisite subject(s)	**Nil**		
Session	**January 2021**	**Section (if, applicable)**	**B**
Name of Faculty	**Dr. Sarthak Mandal**	**Department**	**Chemistry**
Official Email	**smandal@nitt.edu**	**Telephone No.**	**+91-8158805377 (M)**
Name of Course Coordinator(s) (if, applicable)	**Dr. Sarthak Mandal**		
Official E-mail	**smandal@nitt.edu**	**Telephone No.**	**+91-8158805377 (M)**
Course Type (please tick appropriately**)**	☑ **Core course**	☐ **Elective course**	

Syllabus (approved in BoS)

Practicals:

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. Corrosion rate by polarization technique
4. Determination of molecular weight of the polymer by Viscometry.
5. Estimation of Fe^{3+} by spectrophotometer
6. Demonstration of Advanced Spectroscopic Techniques (UV-vis Spectrophotometer and FTIR)
7. Conductometric titration
8. Potentiometric titration
9. pH-metric titration
10. Corrosion rate by polarization technique

Reference and Text Books

1. S. Rattan, *Theory and Practicals of Engineering Chemistry* Kataria, S. K., & Sons, New Delhi, 2013.
2. Practical Manual Provided by the Chemistry Department of NIT Tiruchirappalli.

COURSE OBJECTIVES	
The chemistry laboratory course will consist of virtual simulated experiments, video demonstrations, and discussion on theory and basic principles of each laboratory experiment of this course. The students will learn how the theoretical ideas can be applied for the determination of different components in a given sample through laboratory experiments.	
MAPPING OF COs with POs	
Course Outcomes	Programme Outcomes (PO) (Enter Numbers only)
Students will learn about the:	
Analysis of Water Samples	
Analysis of the Purity of Metal Samples	
Different titration methods for quantitative analysis	
Determination of purity of common chemicals	
Determination of polymer molecular weight	

COURSE PLAN – PART II

COURSE OVERVIEW

This is a two credit chemistry laboratory course offered to I year B.Tech. students at NITT. The practical classes will be conducted virtually through simulated experiments, video demonstrations, and discussions.

COURSE TEACHING AND LEARNING ACTIVITIES **(** Add more rows)

S.No.	Week/Contact Hours	Topic	Mode of Delivery
1	III Week of April	Introduction to the course and discussion on the assessment strategies	MS TEAM
2	IV week of April	Estimation of carbonate, non-carbonate and total hardness in the given water sample.	MS TEAM (Virtual Experiment)
3	I week of May	Estimation of dissolved oxygen in the given water sample.	MS TEAM (Virtual Experiment)

4	II week of May	Determination of molecular weight of the polymer by Viscometry	MS TEAM (Virtual Experiment)
5	III week of May	Estimation of Fe3+ by spectrophotometer	MS TEAM (Virtual Experiment)
6	IV week of May	Corrosion rate by polarization technique	MS TEAM (Virtual Experiment/Video Demonstration)
7	I week of June	Demonstration of Advanced Spectroscopic Techniques	MS TEAM (Virtual Demonstration)
8	II week of June	pH-metric titration	MS TEAM (Virtual Demonstration)
9	III week of June	Conductometric titration	MS TEAM (Virtual Demonstration)
10	IV Week of June	Potentiometric titration	MS TEAM (Virtual Demonstration)

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

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
Practicals				
1	Assessment I (Based on Regular Performances)	Throughout the Semester	3 hours/Week	50
2	Assessment II (Quiz/MCQ type)	I week of June	30 minutes	10
3	Assessment III (Viva)	III Week of June	2 hours	10
CPA	Compensation Assessment*	IV Week of June	30 minutes	10
4	Final Assessment *	I week of July	3 hours	30

Total (100 Marks)

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)

E-mail: smandal@nitt.edu / Phone: +91-8158805377

COMPENSATION ASSESSMENT POLICY

For those students who missed any Lab experiment during Assessment I or II, Compensation assessment will be conducted during IV Week of June.

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, IF ANY

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

FOR APPROVAL

Course Faculty _____**CC- Chairperson** _____ **HOD** _____

Guidelines

a) The number of assessments for any theory course shall range from 4 to 6.

b) Every theory 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.
2019	**2018**	**2017**	**2016**	
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.