

DEPARTMENT OF CHEMISTRY

NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

COURSE PLAN – PART I			
Course Title	Analytical Chemistry Lab		
Course Code	CH612	No. of Credits	2
Course Code of Pre-requisite subject(s)	Nil		
Session	January 2018	Section (if, applicable)	NA
Name of Faculty	Dr. R. Karvembu	Department	Chemistry
E-mail	kar@nitt.edu	Telephone No.	0431-2503636
Course Type	<input checked="" type="checkbox"/> Core course <input type="checkbox"/> Elective course		

Syllabus (approved in BoS)

1. Water analysis
 - a) Estimation of total alkalinity of water
 - b) Estimation of dissolved oxygen in waste water
 - c) Estimation of chloride content in water
 - d) Estimation of hardness in water by EDTA
 - e) Chemical oxygen demand (COD)
2. Milk analysis
 - a) Determination of specific gravity & acidity of milk
 - b) Estimation of total solid content in milk
 - c) Estimation of ash content in milk
 - d) Estimation of fat content in milk
 - e) Estimation of lactose content in milk
3. Butter analysis
 - a) Estimation of moisture content in butter
 - b) Estimation of curd & salt in butter
 - c) Estimation of fat in butter
4. Drug analysis
 - a) Estimation of Isoniazin by KMnO₄ method and bromine method
 - b) Estimation of ascorbic acid in a given tablet
 - c) Estimation of pot. phenoxy methyl penicillin in a given tablet
 - d) Estimation of sulphanilamide
 - e) Estimation of salicylic acid
5. Cement analysis
6. Estimation of caffeine from tea
7. Analysis of antacid tablet
8. Determination of nickel content in the given vanaspathi sample
9. Estimation of nickel content in steel sample

Demonstration experiments 10. Blood analysis a) Estimation of cholesterol in blood b) Estimation of glucose in blood c) Estimation of urea in blood 11. Urine analysis a) Ketone bodies in urine b) Albumin in urine c) Glucose in urine	
COURSE OBJECTIVES	
To introduce the methods of a) Water analysis b) Milk analysis c) Butter analysis d) Drug analysis e) Cement analysis f) Tea analysis g) Antacid tablet analysis h) Vanaspathi analysis i) Steel analysis j) Blood analysis k) Urine analysis	
COURSE OUTCOMES (CO)	
Course Outcomes	Aligned Programme Outcomes (PO)
Students would become familiar with the	
1. Water & milk analysis	
2. Butter & Drug analysis	
3. Cement & tea analysis	
4. Antacid tablet, vanaspathi & steel analysis	
5. Blood & urine analysis	

COURSE PLAN – PART II			
COURSE OVERVIEW			
This practical course is offered to I year M.Sc.(Chemistry) students. One practical class (6 hours) will be conducted per week.			
COURSE TEACHING AND LEARNING ACTIVITIES			
S.No.	Week/Contact Hours	Topic	Mode of Delivery
1	January (3 lab classes)	Estimation of total alkalinity, chloride content, hardness and dissolved oxygen in water sample	Experiment

2	February (4 lab classes)	Estimation of specific gravity, acidity, total solid content, ash content, fat content and lactose content in milk Estimation of moisture content, curd, salt and fat in butter	Experiment
3	March (4 lab classes)	Estimation of isoniazin, ascorbic acid, pot. phenoxy methyl penicillin, sulphanimide and salicylic acid in drugs	Experiment
4	April (4 lab classes)	Analysis of cement, tea, antacid tablet, vanaspathi and steel Blood and urine analysis	Experiment

COURSE ASSESSMENT METHODS (shall range from 4 to 6)

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Regular class experiments	Tuesday (6 h)	15 lab classes	75%
CPA	Compensation assessment	I week of May	6 h	
2	Final Assessment	II week of May	6 h	25%

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

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

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

MODE OF CORRESPONDENCE (e-mail/phone etc): E-mail and mobile

ATTENDANCE: 75% is required for appearing final assessment. Those who secured less than 75% attendance may make up during weekends.

COMPENSATION ASSESSMENT: Compensation assessment will be held in the I week of May.

ACADEMIC HONESTY & PLAGIARISM: Students who copy the results from other students will get only zero mark for that experiment.

ADDITIONAL INFORMATION

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

FOR APPROVAL

Course Faculty  17/11/18
 CC-Chairperson  HoD  17/11/18