DEPARTMENT OF CHEMISTRY

NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

COURSE PLAN – PART I			
Name of the programme and specialization	**M.Sc. Chemistry**		
Course Title	Instrumental Methods and Spectroscopy Lab		
Course Code	CH 623	**No. of Credits**	**2**
Course Code of Pre-requisite subject(s)	**NIL**		
Session	**July 2019**	**Section (if, applicable)**	**NIL**
Name of Faculty	**Dr. A Sreekanth**	**Department**	**CHY**
Email	**sreekanth@nitt.edu**	**Telephone No.**	**9489551851**
Name of Course Coordinator	**Dr. A Sreekanth**		
E-mail		**Telephone No.**	
Course Type	☑ **Core course** ☐ **Elective course**		

Syllabus (approved in BoS)

1. Fabry Perot Etalon- Spacing of Etalon-Finesse and free spectral range
2. Zeeman effect- Analysis of Plank's constant and Bohr magneton
3. Michelson's interferometer- Wavelength of laser, refractive index, magnetostrictive properties of ferromagnetic materials
4. Calculation of extinction coefficient
5. Diffraction gratings- Wavelength of light
6. Photoelectric effect- Planks constant- Work function of material
7. Fluorescence spectroscopy- Excitation and emission, Kashasrule
8. Absorption spectroscopy- Beers law –Deviations-Titrations
9. Polarization of light- Rayleigh scattering-Dichroism and birefringence

COURSE OBJECTIVES

To introduce the students to basic working principles of instrumentation and spectroscopy/

COURSE OUTCOMES (CO)

Course Outcomes	Aligned Programme Outcomes (PO)
1. Hands on experience in spectroscopic instruments	
2. Trying various instrumental methods	
3. Application studies to organic compounds	

COURSE PLAN – PART II

COURSE OVERVIEW

2 Credit Laboratory Course. 3 Hours weekly lab and 2 Hours tutorial as and when required.

COURSE TEACHING AND LEARNING ACTIVITIES

S.No.	Week/Contact Hours	Topic	Mode of Delivery
1	Every week 6 Hr	All experiments in Rotation	
2			

COURSE ASSESSMENT METHODS (shall range from 4 to 6)

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Assignment	3r Week of September	NA	10
2	Weekly Experiments	All Weeks		40
3	Viva	IIIrd week of November		10
4	Final Assessment *	IV week of November		40

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

MODE OF CORRESPONDENCE (email/ phone etc)
As above
COMPENSATION ASSESSMENT POLICY

For students who have missed daily experiments, can compensate in the immediate weeks.

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

FOR APPROVAL

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

Dr. A. Sreekanth