

COURSE TEMPLATE

1.	Department / Centre proposing the course	Chemistry
2.	Course Title (< 45 characters)	CHEMISTRY LABORATORY
3.	L-T-P structure	0 - 0 - 4
4.	Credits	2
5.	Course number	CYP100
6.	Status (category for program)	

7.	Pre-requisites (course no./title)	NA
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8.	Status vis-à-vis other courses (give course number/title)	
8.1	Overlap with any UG/PG course of the Dept./Centre	NA
8.2	Overlap with any UG/PG course of other Dept./Centre	NA
8.3	Supercedes any existing course	NA

9.	Not allowed for (indicate program names)	NA
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10.	Frequency of offering	☒ Every sem ☐ 1 st sem ☐ 2 nd sem ☒ Either sem
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11.	Faculty who will teach the course Multiple Faculty members teach different groups of students	
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12.	Will the course require any visiting faculty?	No
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13.	Course objective (about 50 words): This is an integrated laboratory course consisting of 10 - 12 experiments encompassing the fundamentals of physical, organic and inorganic chemistry. The course exposes the student to inorganic and organic syntheses as well as basic quantitative and qualitative analyses along with opportunities to handle basic equipments (pH meter, conductivity meter, viscometer, spectrophotometer). The course is designed to illustrate the underlying principles of chemical and electro-analytical techniques, dynamics and chemical transformations.	
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14.	Course contents (about 100 words) (Include laboratory/design activities): Experiments involve the following: Titrations, Surface Tension and Viscosity, Potentiometry, Conductometry, Preparation of metal complexes and important organic compounds, Kinetics, Chromatography, Qualitative and quantitative estimation of organic compounds. Special emphasis is laid on application of the theoretical knowledge that the	
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	students have learned before to practical use; the experiments have been so selected that the importance and utility of chemistry in our daily life is well reflected.
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15. Lecture Outline *(with topics and number of lectures)*

Module no.	Topic	No. of hours
1	NA	
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
COURSE TOTAL (14 times 'L')		

16. Brief description of tutorial activities

NA

17. Brief description of laboratory activities

Module no.	Experiment description	No. of hours
1	Surface Tension and Viscosity	4
2	Estimation of Alkalinity of Water	4
3	Preparation of as Nickel Complex and Complexometric Titration	4
4	Potentiometric Titrations using a pH meter	4
5	Chemical Kinetics - Acid hydrolysis of ethyl acetate	4
6	Preparation of Benzimidazole	4
7	Conductometry	4
8	Quantitative estimation of Organic Compounds: glycine and glucose	4
9	Acetylation of Ferrocene and Thi Layer Chromatography	4
10	Identification of Functional Groups present in an organic compound (I)	4
COURSE TOTAL (14 times 'P')		

18. Suggested texts and reference materials

STYLE: Author name and initials, Title, Edition, Publisher, Year.

1. Anil J. Elias, A collection of Interesting General Chemistry Experiments, Universities Press (Hyderabad), 2002.
2. J. Medham, R. C. Denney, J. D. Barnes, M. J. K. Thomas, Vogel's Textbook of Quantitative Analysis, 6th edition, Pearson Education Ltd.
3. D. A. Skoog, D. M. West, F. J. Holler, Analytical Chemistry: An introduction, 7th edition, Saunders College Publishing, Florida, 2007.
4. Roberts, R. M. Gilbert, J. C., Rodewald, L. B., Wingrove, A. S. Holt, Rinehart and Winston, An introduction to Modern Experimental Organic Chemistry, INC, NY, 1969.

19. Resources required for the course (*itemized & student access requirements, if any*)

19.1	Software	Software for data analysis and plotting graphs
19.2	Hardware	NA
19.3	Teaching aides (videos, etc.)	Projectors for explaining concepts
19.4	Laboratory	Yes (With proper infrastructure like fume hoods)
19.5	Equipment	Many basic equipments (students operate themselves)
19.6	Classroom infrastructure	NA
19.7	Site visits	NA

20. Design content of the course (*Percent of student time with examples, if possible*)

20.1	Design-type problems	50 %
20.2	Open-ended problems	5 %
20.3	Project-type activity	10 %
20.4	Open-ended laboratory work	10 %
20.5	Others (please specify)	25 % (handling of different equipments and planned approach to synthetic routes)

Date:

(Signature of the Head of the Department)