DEPARTMENT OF CHEMISTRTY

NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, Surathkal

COURSE PLAN AND EVALUATION PLAN

1) **Course Code**: CY 111 2) **Course Title**: Chemistry Lab 3) **L-T-P**: 0-0-3 (2)

4) **Credit**: Two 5) **Pre- requisite**: Nil 6) **Course category**: BSc

7) **Teaching Department**: Chemistry 8) **Course for**: I/II Semester B. Tech.

9) *Objectives of the course:*

a) To understand the principles of volumetric analysis in chemistry

b) To have exposure to procedures such as weighing, preparation of standard solution, titration etc.

c) To know the principle of Instrumental methods of analysis such as colorimetry, conductometry and potentiometry.

d) To know the techniques of titrations and handling certain instruments like Conductometer, Potentiometer etc.

10) *Skill development of the student expected from the course:*

a) Development of practical skill in chemistry lab activities.

b) Achievement of confidence in handling chemicals, glassware and instruments.

c) Learning of some of the volumetric and instrumental methods of analysis in chemistry.

d) Training in planning of lab experiments, accurate observation, data collection, reasoning and reporting of results.

e) Acquisition of skills in measuring, weighing, transferring chemicals, taking readings etc.

11) *Course coverage:*

Schedule	Experiments	Schedule	Experiments
1st week	Estimation of total hardness of water	7th week	Conductometry
2nd week	Estimation of percentage of Cu in brass	8th week	Colorimetry
3rd week	Estimation of percentage of MnO_2 in Pyrolusite	9th week	Potentiometry
4th week	Estimation of percentage of iron in Hematite	10th week	Refractometry
5th week	Estimation of N_2 in ammonium fertilizer	11th week	Repetition experiment
6th week	**MID- TERM EXAM**	12th week	**END – TERM EXAM**

12) Reference books:

i) Engineering Chemistry Lab Manual supplied from Dept. of Chemistry, NITK, Surathkal.

ii) Vogel's Text Book of Quantitative Chemical Analysis, Furnis et al. (ed) Pearson publication.

13) Details of Tutorials, if any: Nil

14) **EVALUATION PLAN**:

1. The course will be evaluated in three components: Continuous evaluation, Mid-term and End-sem tests. The weightage for the three components is as follows:

   Continuous Evaluation : **35 Marks**
   Mid – Term Exam : **25 Marks**
   End- Term Exam : **40 Marks**

2. Continuous evaluation will include the following
   a) Record book will be checked after each experiment. At the end of semester, record will be **evaluated for 5 marks for neatness and completeness**.

   b) After 4 experiments, the written quiz Test-1 will be conducted for **15 marks, Time: 30 Minutes.**

c) After 9 experiments, the written quiz Test-2 will be conducted for **15 marks, Time: 30 Minutes.**

d) Quiz Test-1 & Quiz Test-2 total weightage is **30 marks**.

e) **Quiz Test I & Quiz Test II will be with common question paper throughout all sections (S1-S6).**

3. Mid-Term Exam will have weightage of **25 Marks. ONE procedure writing for 5 marks and ONE volumetric titration experiment for 20 marks.**
4. End-Term Test will have weightage of **40 Marks. ONE procedure writing for 10 marks and ONE volumetric titration/ Instrumentation experiment for 30 marks.**

5. Scheme of **evaluation** for **MID-TERMEXAM** is as follow:

TOTAL MARKS: 25

a) Procedure Writing **: 5 Marks**
b) Experiment (Volumetric) **: 18 Marks**
Calculation **: 2 Marks**

Standardization Part		**Estimation Part**	
± 0.1 ml	9 marks	± 0.1 ml	9 marks
± 0.2 ml	8 marks	± 0.2 ml	8 marks
± 0.3 ml	7 marks	± 0.3 ml	7 marks
± 0.4 ml	5marks	± 0.4 ml	5marks
±0.5 ml	3 marks	±0.5 ml	3 marks
Any value	2 marks	Any value	2 marks