

CHE-381-OJT: ON JOB TRAINING

Course Type: OJT

Credits: 4

A. Course Objectives:

1. To provide hands-on training in chemistry-related industries, laboratories, and research organizations.
2. To develop laboratory skills, analytical abilities, and professional ethics among students.
3. To expose students to industrial practices, instrumentation, quality control, and safety procedures.
4. To enhance problem-solving, teamwork, communication, and technical skills.
5. To familiarize students with modern analytical instruments and industrial processes.
6. To create awareness regarding entrepreneurship and employment opportunities in chemistry.

B. Course Outcomes (COs):

CO No.	Course Outcome Statement (COs) <i>After learning the course, the students are able to -</i>
CO-1	Apply theoretical chemistry concepts in practical and industrial environments.
CO-2	Operate and understand basic analytical instruments and laboratory techniques.
CO-3	Demonstrate professional ethics, laboratory safety, and teamwork.
CO-4	Analyze chemical processes, observations, and experimental data effectively.
CO-5	Prepare technical reports and communicate scientific findings professionally.
CO-6	Develop employability and entrepreneurship skills in chemistry-related sectors.

C. Contents:

1. Introduction

The On-the-Job Training (OJT) course is designed to provide practical exposure, skill development, and industrial experience to T.Y.B.Sc. Chemistry students in accordance with NEP 2020 guidelines. The course aims to bridge the gap between theoretical chemistry knowledge and its real-life applications in industries, laboratories, research institutes, and entrepreneurship sectors. The OJT shall be conducted under the supervision of the Department of Chemistry and concerned industry/organization mentor.

2. Areas for OJT Training

Students may complete OJT in any one of the following areas:

A) Analytical Instrumentation Training

Hands-on training on selected instruments such as:

- UV-Visible Spectrophotometer
- FT-IR Spectrometer
- pH Meter
- Conductivity Meter
- Flame Photometer
- Colorimeter
- HPLC
- Gas Chromatography
- XRD
- Thermal Analyzer
- Raman Spectrometer
- CHN Analyzer
- NMR spectrometer
- Mass spectrometer
- Any other instrument related to chemistry

Note: Instruments selected should collectively complete the required 120 hours.

B) Industrial Training

Training in:

- Pharmaceutical industries
- Chemical manufacturing industries
- Food and beverage industries
- Fertilizer industries
- Polymer industries
- Paint and dye industries
- Water analysis laboratories
- Environmental monitoring laboratories
- Any other chemistry based industry

C) Research Laboratory Training

Training at:

- National laboratories
- Research institutes
- University research centers

- Testing laboratories
- Quality control laboratories

D) Entrepreneurship-Oriented Training

Students may undertake training related to preparation and packaging of:

- Soaps and detergents
- Phenyl and cleaning agents
- Herbal products
- Dyes and pigments
- Sanitizers
- Fertilizers
- Laboratory reagents
- Other chemistry-based products

3. General Guidelines

1. Every student must complete **120 hours** of OJT training.
2. OJT may be conducted during vacation, semester break, or as scheduled by the department.
3. Students must maintain discipline and follow the rules of the organization/institute.
4. Students shall maintain:
 - Daily diary/logbook
 - Attendance record
 - Activity record
5. Attendance during OJT is compulsory.
6. The training mentor/supervisor shall monitor the student's progress.
7. Students must submit a detailed OJT report at the end of training.
8. The report must be certified by the industry/research mentor and departmental coordinator.
9. Students shall give a presentation/viva voce during final evaluation.
10. Any malpractice or fake submission shall lead to cancellation of OJT.

4. Format of OJT Report

The report should contain the following sections:

1. Title Page
2. Certificate
3. Declaration
4. Acknowledgement

5. Index
6. Introduction
7. Objectives of Training
8. Organization/Industry Profile
9. Details of Work Performed
10. Instrumentation/Techniques Used
11. Observations and Learning Outcomes
12. Safety Measures Followed
13. Conclusion
14. References
15. Appendix
16. Attendance Sheet
17. Daily Logbook

5. Report Specifications

- Font: Times New Roman
- Font Size: 12
- Heading Size: 14–16
- Line Spacing: 1.5
- Margin:
 - Left: 1.5 inch
 - Others: 1 inch
- Report Binding: Black book/Spiral Binding
- Copies Required: 2 (Department & Student)

6. Evaluation Scheme for OJT (4 Credits)

Component	Marks
Internal Evaluation	30 Marks
External Evaluation	70 Marks
Total	100rks

A) Internal Evaluation (30 Marks)

The internal evaluation shall be carried out by the Departmental Coordinator/Faculty Supervisor based on student performance during the OJT period.

Sr. No.	Criteria	Marks
1	Attendance, Discipline and Punctuality	05
2	Maintenance of Daily Diary / Logbook	05
3	Laboratory Skills and Participation	05
4	Technical Knowledge and Learning Ability	05
5	Professional Behaviour, Communication and Teamwork	05
6	Progress Report / Mid-Term Review	05
Total		30 Marks

B) External Evaluation (70 Marks)

The external evaluation shall be conducted jointly by the External Examiner and Internal Examiner through report assessment, presentation, and viva-voce examination.

Sr. No.	Criteria	Marks
1	OJT Report and Documentation	20
2	Presentation / Demonstration	15
3	Viva-Voce Examination	10
4	Practical Understanding and Skill Proficiency	10
5	Overall Performance and Industrial Exposure	15
Total		70 Marks

C) Passing Criteria

1. Students must complete **120 hours** of On-the-Job Training.
2. Separate passing is mandatory in:
 - Internal Evaluation
 - External Evaluation
3. Submission of:
 - Attendance Sheet
 - Daily Diary/Logbook
 - Certified OJT Report is compulsory for external examination.
4. Students must appear for presentation and viva-voce examination.

D) Suggested Distribution of Responsibilities

Evaluation Component	Evaluator
Internal Evaluation	Departmental Supervisor / OJT Coordinator
External Evaluation	External Examiner + Internal Examiner