Course Specification

Field Training (1)

CHE 3YY

A- Affiliation

Relevant programs:	Chemical engineering program
Departments offering the program:	Chemical engineering program
Department offering the course:	Chemical engineering program
Date of regulation approval:	2019
Date of specification approval:	2024-2025

B - Basic Information

Title: (Practical field training (1))	**Code: CHE 3YY**	**Year/level:**: 3rd year/ 2ndsemester
Training period	**Total hour: 45 hr**	

C - Professional Information

1 – Course Learning Objectives

The field training of the Chemical Engineering Program at the Chemical Engineering Department is a practical skills acquisition program that prepares its participants to become rational leaders in field skills.
To graduate an engineer that has field skill such as:

1- To ensure that the graduats have an understanding of the highest standards of personal and professional and ethical responsibility in the practice of chemical engineering systems and its application

2- To ensure that the graduats are well trained in chemical processes are able to identify, formulate and solve awide range of chemical engineering problems using modern engineering tools, vessel and techniques

3- To provide students with a major design experience involving ateam approach and alternate solution in continuity equation, Heat transfer model, Mass transfer model, Chemical and physical equilibrium model, unit operation and rate equitation model.

2 - Learning Outcomes (LOs)

By the end of the practical field training the student should be able to:

a1 Relate Practical work to previous knowledge from basic science, Engineering fundamentals and discipline related courses. $B_{1.3}$

a2 Interpret the problems and solved problems with practical issues. $B_{3.1}$

a3 Apply the principle of design including elements and processes or system. $B_{2.1}$

a4 Deffrentiate between types of tools, vessel and equipment uses in production processes $A_{4.2}$.

a5 Communicate effectively with – in the working environment in a team work. $A_{8.2}$

a6 Design and perform mass and energy balance of chemical engineering systems using process simulation software . $A_{3.4}$

3 – Contents

Topic	Field training hours
The student will spend field training in a chemical factory and prepare a report at the end of the training showing a full description of the steps of manufacturing and types of processes, and equipment.	45

4- Teaching and Learning methods:

Course learning Outcomes (LOs)	Lectures/ online lecture	Presentations and Movies	Discussions	Tutorials	Practical and Laboratory experiments	Problem solving	Projects	Self-learning	Site visits /simulation &modeling	Researches and Reports	Cooperative work
a1	√	√	√		√				√		
a2	√	√	√		√	√			√		√
a3	√	√	√		√				√		√
a4	√	√	√		√				√		√
a5	√	√	√		√	√			√		√
a6	√	√	√		√	√			√		√

5- Students' Assessment Methods

Students will negotiate their training on an individual or group. Students will be allocated an academic supervisor who will supervise them.

5-1 Tools:

Enthusiasm and interest in work	
Attitude towards delivering accurate work	Contents of a1-a2-a3-a4-a5-a6
Quality of work output	Contents of a1-a2-a3-a4-a5-a6
Initiative in taking tasks to complete	Contents of a1-a2-a3-a4-a5-a6
Dependability and reliability	Contents of a1-a2-a3-a4-a5-a6
Ability to learn and search for information	Contents of a1-a2-a3-a4-a5-a6
Judgment and decision making	Contents of a1-a2-a3-a4-a5-a6
Maintaining effective relations with co-works	Contents of a1-a2-a3-a4-a5-a6
Ability of reporting and presenting his work	Contents of a1-a2-a3-a4-a5-a6
Attendance	Contents of a1-a2-a3-a4-a5-a6
Punctuality	Contents of a1-a2-a3-a4-a5-a6
Final exam	Contents of a1-a2-a3-a4-a5-a6

5-2 Time schedule:		
Interest in work	Per-day	External trainer
Attitude towards delivering accurate work	Per-day	
Quality of work output	Per-day	
Initiative in taking tasks to complete	Per-day	
Dependability and reliability	Per-day	
Ability to learn and search for information	Per-day	
Judgment and decision making	Per-day	
Maintaining effective relations with co-works	Per-day	
Ability of reporting and presenting his work	Per-day	
Attendance	Per-day	
Punctuality	Per-day	
Final exam	**The fourth work**	**Depertment supervisors**

5-3 Grading system		
Interest in work	66.7%	50
Attitude towards delivering accurate work		
Quality of work output		
Initiative in taking tasks to complete		
Dependability and reliability		
Ability to learn and search for information		
Judgment and decision making		
Maintaining effective relations with co-works		
Ability of reporting and presenting his work		
Attendance		
Punctuality		
Final exam	**33.3**	**25**
Total	**100%**	**75**

6- List of References

6-1 Course Notes:

Course note

6-2 Required books

6-2 **Recommended books**

6-4 Periodicals, Web sites, etc.

7- Facilities Required for Teaching and Learning

a. chemical factory
b. Lecture room
c. Data show
d. Lab.

Course Coordinator:	Dr. Haitham Ahmed Abdel Samad	

Head of the Department:	Associate prof. Dr. Ghada kadry	
Date:	2024-2025	

Course Title	Field Training (1)
Course Code	CHE 3YY

The matrix of knowledge and skills of the target course 2024-2025

Contents	Course Learning outcomes (LOs)
The student will spend field training in a chemical factory and prepare a report at the end of the training showing a full description of the steps of manufacturing and types of processes, equipment and equipment.	a1-a2-a3-a4-a5-a6

Program LOs	Course LOs
B1.3 Demonstrate the chemical engineering principles and design principles techniques in chemical engineering	a1 Relate Practical work to previous knowledge from basic science, Engineering fundamentals and discipline related courses.
B3.1 Explains basic information and methods of evaluation, good analysis, modelling and simulation of industrial processes	a2 Interpret the problems and solved problems with practical issues.
B2.1 Engage in the recent technological changes and emerging fields relevant to chemical engineering	a3 Apply the principle of design including elements and processes or system.
A4.2 Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues, and risk management principles.	a4 Deffrentiate between types of tools, vessel and equipment uses in production processes
A8.2 Communicate effectively – graphically, verbally and in writing – with a range of audiences using contemporary tools	a5 Communicate effectively with – in the working environment in a team work.
A3.4 Use Chemical Engineering IT tools and programming in design	a6 Design and perform mass and energy balance of chemical engineering systems.

Program Aim	Course Aim
1.1 Apply knowledge and advanced technical skills in chemical engineering. 1.6 Identify and control the impact that chemical engineering has on society from an environmental, economic, social and cultural point of view.	- To ensure that the graduats have an understanding of the highest standards of personal and professional and ethical responsibility in the practice of chemical engineering systems and its application
1.1 Apply knowledge and advanced technical skills in chemical engineering. 1.2 Utilize and manage resources creatively through effective analysis and interpretation skills. 1.3 Recognize the potential and applicability of computer-based methods in chemical engineering design. 1.4 Address the issues of process dynamics and control in plant operation. 1.5 Plan and execute research work, evaluate outcomes and draw conclusions.	- To ensure that the graduats are well trained in chemical processes are able to identify, formulate and solve awide range of chemical engineering problems using modern engineering tools, vessel and techniques - To provide students with a major design experience involving ateam approach and alternate solution in continuity equation, Heat transfer model, Mass transfer model, Chemical and physical equilibrium model, unit operation and rate equitation model.

Course Coordinator:	Dr. Haitham Ahmed Abdel Samad assistant lecturer: Haia Mohamed	
Head of the Department:	Associate prof. Dr. Ghada kadry	Dr Ghada kadry
Date:	2024-2025	

Course Specification

Field Training (2)

CHE 4YY

A- Affiliation	
Relevant programs:	Chemical Engineering Program
Departments offering the program:	Chemical engineering department
Department offering the course:	Chemical engineering department
Date of regulation approval:	2019
Date of specification approval:	2024-2025

B - Basic Information

Title:	**Code:**	**Year/level:**: 4th year / 1st semester
Field Training (2)	**CHE 4YY**	
Training period	**Total hour: 45hr.**	

C - Professional Information

1 – Course Learning Objectives

1. Cooperative training is a prerequisite for graduate students. Through this course, students can work for a specific government or private facilities in order to equip them with practical experience in the areas of specialization.
2. The training Falls within the regular instructions of training programs that contains actions related to duration, entry requirements, selection of training, plan, work, evaluate the trainee, and the contribution of the academic supervisor.
3. Provide an opportunity for students to gain practical experience and training before graduation within institutions in labor market.

2 – Learning Outcomes (LOs)

By the end of the practical field training the student should be able to:

a1 Apply concepts and theories which they have learned in their work. **$B_{1.3}$**

a2 Design a practical chemical engineering system, component or process utilizing a full range of chemical engineering principles and techniques including Mass and Energy Balance, Thermodynamics, Mass Transfer, Heat Transfer, Momentum Transfer, Kinetics of Chemical Reactions, Reactor Design, Instrumentation and Control of Chemical Processes, and Process and Plant Design. **$B_{1.5}$**

a3 Acquire insight in the development of raw material, methods of conversion into a useful product, improve the ability to select proper material of construction of equipment in industrial process. **C_1**

a4 Design and operate different processing systems in the chemical process industries including chemical process, petroleum refining and gas processing and assess the balance of cost, quality and effects on the environment in production operations **C_2**

a5 Apply the concepts of project economics and resources evaluation methods for design and decision making under conditions of risk and uncertainty. **C_3**

3 – Contents

Topic	Field training hours
The student will spend field training in a chemical factory and prepare a report at the end of the training showing a full description of the steps of manufacturing and types of processes and equipment.	45

4 - Teaching and Learning methods:

Course learning Outcomes (LOs)	Lectures	Presentations and Movies	Discussions	Tutorials	Practical and Laboratory experiments	Problem solving	Projects	Self-learning	Site visits /simulation &modeling	Researches and Reports	Cooperative work
a1	√	√	√		√				√		
a2	√	√	√		√	√			√		√
a3	√	√	√		√				√		√
a4	√	√	√		√				√		√
a5	√	√	√		√	√			√		√

6- Students' Assessment Methods

Students will negotiate their training on an individual or group. Students will be allocated an academic supervisor who will supervise them.

5-1 Tools:	
Enthusiasm and interest in work	a1, a2, a3, a4, a5
Attitude towards delivering accurate work	a1, a2, a3, a4, a5
Quality of work output	a1, a2, a3, a4, a5
Initiative in taking tasks to complete	a1, a2, a3, a4, a5
Dependability and reliability	a1, a2, a3, a4, a5
Ability to learn and search for information	a1, a2, a3, a4, a5
Judgment and decision making	a1, a2, a3, a4, a5
Maintaining effective relations with co-works	a1, a2, a3, a4, a5
Ability of reporting and presenting his work	a1, a2, a3, a4, a5
Attendance	a1, a2, a3, a4, a5
Punctuality	a1, a2, a3, a4, a5
Final exam	a1, a2, a3, a4, a5

5-2 Time schedule:		
Interest in work	Per-day	External trainer
Attitude towards delivering accurate work	Per-day	
Quality of work output	Per-day	
Initiative in taking tasks to complete	Per-day	
Dependability and reliability	Per-day	
Ability to learn and search for information	Per-day	
Judgment and decision making	Per-day	
Maintaining effective relations with co-works	Per-day	
Ability of reporting and presenting his work	Per-day	
Attendance	Per-day	
Punctuality	Per-day	
Final exam	The fourth work	Depertment supervisors

5-3 Grading system		
Interest in work	66.7%	50
Attitude towards delivering accurate work		
Quality of work output		
Initiative in taking tasks to complete		
Dependability and reliability		
Ability to learn and search for information		
Judgment and decision making		
Maintaining effective relations with co-works		
Ability of reporting and presenting his work		
Attendance		
Punctuality		
Final exam	33.3 %	25
Total	100%	75

6- List of References

6-1 Course Notes:

Course note

6-2 Required books

6-3 Recommended books

6-4 Periodicals, Web sites, etc.

7- Facilities Required for Teaching and Learning

chemical factory , Lecture room , Data show , Lab.

Course Coordinator:	Dr. Haitham A.Abdel Samad	
Head of the Department:	Associate Prof. Dr. Ghada Kadry	
Date:	2024-2025	

Course Title	**Field Training (2)**
Course Code	**CHE 4YY**

The matrix of knowledge and skills of the target course 2024-2025

Contents	**Course Learning Outcomes (LOs)**
The student will spend field training in a chemical factory and prepare a report at the end of the training showing a full description of the steps of manufacturing and types of processes, and equipment.	a1, a2, a3, a4, a5

Program LOs	**Course LOs**
$B_{1.3}$ Demonstrate the chemical engineering principles and design principles techniques in chemical engineering	a1 Apply concepts and theories which they have learned in their work.
$B_{1.5}$ Design a practical chemical engineering system, component or process utilizing a full range of chemical engineering principles and techniques including Mass and Energy Balance, Thermodynamics, Mass Transfer, Heat Transfer, Momentum Transfer, Kinetics of Chemical Reactions, Reactor Design, Instrumentation and Control of Chemical Processes, and Process and Plant Design.	a2 Design a practical chemical engineering system, component or process utilizing a full range of chemical engineering principles and techniques including Mass and Energy Balance, Thermodynamics, Mass Transfer, Heat Transfer, Momentum Transfer, Kinetics of Chemical Reactions, Reactor Design, Instrumentation and Control of Chemical Processes, and Process and Plant Design.
C_1 Acquire insight in the development of raw material, methods of conversion into a useful product, improve the ability to select proper material of construction of equipment in industrial process	a3 Acquire insight in the development of raw material, methods of conversion into a useful product, improve the ability to select proper material of construction of equipment in industrial process.
C_2 Design and operate different processing systems in the chemical process industries including petroleum refining and gas processing and assess the balance of cost, quality and effects on the environment in production operations	a4 Design and operate different processing systems in the chemical process industries including chemical process, petroleum refining and gas processing and assess the balance of cost, quality and effects on the environment in production operations
C_3 Apply the concepts of project economics and resources evaluation methods for design and decision making under conditions of risk and uncertainty.	a5 Apply the concepts of project economics and resources evaluation methods for design and decision making under conditions of risk and uncertainty.

Program Aim	Course Aim
1.2 Utilize and manage resources creatively through effective analysis and interpretation skill.	1. Cooperative training is a prerequisite for graduate students. Through this course, students can work for a specific government or private facilities in order to equip them with practical experience in the areas of specialization.
1.5 Plan and execute research work, evaluate outcomes and draw conclusions.	2. The training Falls within the regular instructions of training programs that contains actions related to duration, entry requirements, selection of training, plan, work, evaluate the trainee, and the contribution of the academic supervisor.
1.6 Identify and control the impact that chemical engineering has on society from an environmental, economic, social and cultural point of view.	3. Provide an opportunity for students to gain practical experience and training before graduation within institutions in labor market.

Course Coordinator:	Dr. Haitham A.Abdel Samad Assistant lecturer: Haia Mohamed	
Head of the Department:	Associate Prof. Dr. Ghada Kadry	Dr Ghada Kadry
Date:	2024-2025	