Mutah University

Faculty of Engineering

Chemical Engineering Department

جامعة مؤتة

كلية الهندسة

قسم الهندسة الكيميائية

Computer Applications in Chemical Engineering (1)

COURSE SYLLABUS

Course Code	Course Name	Credits	Contact Hours
0404306	Computer Applications in Chemical Engineering (1)	1	16

INSTRUCTOR/COORDINATOR	
Name	Dr. Mohammad A. Aliedeh
Email	maliedeh@mutah.edu.jo
Website	https://www.mutah.edu.jo/ar/engineering/Lists/AcademicStaff/Disp_Form.aspx?ID=91

TEXTBOOK

Text:
- Finlayson, B. A., & Finlayson, B. A. (2014). Introduction to chemical engineering computing. John Wiley & Sons, Inc.

References:
- Computer Packages Manuals
- Michael B. Cutlip and Mordechai Shacham, Problem Solving in Chemical Engineering with Numerical Methods. Prentice Hall, 1998.
- Hanna, O. T., & Sandall, O. C. (1995). Computational Methods in Chemical Engineering. Prentice Hall PTR.

SPECIFIC COURSE INFORMATION

A. Brief Description of the Content of the Course (Catalog Description)

This course aims to provide the student with the skill in the use of Internet resources and computer packages, and to provide students with the basics of using computers in chemical engineering. In addition to using internet search engines; Useful chemical engineering links and databases; Libraries at the level of the virtual world. The course also aims to provide the student with the ability to use some of the available packages used in the field of chemical engineering, such as EZ-Solve, Polymath, Matlab, and MathCad. Students will perform a number of tasks involving problem solving using information acquired online as well as the digital and symbolic capabilities of computer packages.

B. Pre-requisites (P) or Co-requisites (C)

Numerical Analysis (0404305)   (P)

C. Course Type (Required or Elective)

Required (Compulsory Department Course)

SPECIFIC GOALS

A. Specific Outcomes of Instruction

By the end of this course, the student should be able to:

1. understand the basics of using Chemical Engineering **Internet resources and computer packages**. **(SLO 1)**
2. understand and practice using internet search engines; Useful chemical engineering links and databases; Libraries at the level of the virtual world. **(SLO 1, 3, 5, 7)**
3. acquire the ability to use some of the available packages such as EZ-Solve, Polymath, Matlab, and MathCad in solving problems in the field of chemical engineering. **(SLO 1, 3, 5, 7)**
4. perform a number of chemical engineering tasks involving problem solving using information acquired online as well as the digital and symbolic capabilities of computer packages. **(SLO 1, 3, 5, 7)**

B. Student Learning Outcomes (SLOs) Addressed by the Course

1	2	3	4	5	6	7				
✓		✓		✓		✓				

BRIEF LIST OF TOPICS TO BE COVERED		
List of Topics	**No. of Weeks**	**Contact Hours**
• **Internet resources and computer packages** used in Chemical Engineering	1	1
• **Basics of using computers** in chemical engineering	2	2
• Implementing **internet search engines**, **Useful chemical engineering links and databases**, and **Libraries at the level of the virtual world**.	2	2
• The basic skills in using the available **packages used in the field of chemical engineering**, such as **EZ-Solve, Polymath, Matlab, and MathCad**	3	3
• Performing a **number of tasks involving problem solving** using information acquired online as well as the **digital and symbolic capabilities of computer packages.**	3	3
Mid Term Exam	**1**	**1**
• practice all the above **acquired skills in the context of chemical engineering** basic and engineering practices.	3	3
Final Exam	**1**	**1**
Total	**16**	**16**

METHODS OF ASSESSMENT			
No.	Method of assessment	Week and Date	%
1	Mid Term Examination	8th week	**20**
2	Homeworks	Homework/week	**40**
3	Final Examination	End of Semester	**40**
	Total		**100**