

COURSE SYLLABUS – ChE 464

<i>COURSE TITLE</i>	<i>ENGLISH CODE/NO</i>	<i>ARABIC CODE/NO</i>	<i>CREDITS</i>				
			<i>Th.</i>	<i>Pr.</i>	<i>Tr.</i>	<i>Tu.</i>	<i>Total</i>
Petrochemical Technology	ChE 464	كـ ٤٦٤	3	--	--	1	3
<i>Pre-requisites:</i>	ChE 334						
<i>Course Role in Curriculum</i>	<i>Required or Elective:</i>			Elective			
	<i>A pre-requisite for:</i>			--			
<i>Catalogue Description:</i> Production technologies of synthesis gas, olefins and aromatic. Manufacture of important petrochemicals derived from base chemicals and synthesis gas. Production technologies of important polymers and plastics							

<i>Textbooks:</i> Jacob A. Moulijn, Michiel Makkee, annelles E. Van Diepen, Chemical Process Technology, 2 nd Edition, John Wiley, 2013
<i>Supplemental Materials:</i> I.D. Mall, Petrochemical Process Technology, Macmillan India Limited, 2006.

Course Learning Outcomes:

By the completion of the course the student should be able to:

1.	<u>Discuss</u> the major petrochemicals produced in Saudi Arabia and the economic importance of petrochemical industries.
2.	<u>Explain</u> the major components of petrochemical plants.
3.	<u>Acquire</u> the knowledge of the different types of catalytic processes, catalytic reactors and separation techniques.
4.	<u>Understanding</u> the safety precautions in petrochemical processes.
5.	<u>Discuss</u> the production of petrochemical from ethylene, propylene, higher olefins and BTX.
6.	<u>Understand</u> the concept of thermoplastic and thermosetting resins.
7.	<u>Explain</u> the production processes for polyethylene, PVC, polypropylene and thermosets.

<u>Topics to be Covered:</u>	<u>Duration in Weeks</u>
1. Production technologies of synthesis gas.	2
2. Manufacture of important petrochemicals derived from base chemicals and synthesis gas.	6
3. Production technologies of important polymers and plastics.	6

Key Student Outcomes addressed by the course: (Put a ✓ sign)

(a) an ability to apply knowledge of mathematics, science, and engineering	
(b) an ability to design and conduct experiments, as well as to analyze and interpret data	
(c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability	✓
(d) an ability to function on multidisciplinary teams	
(e) an ability to identify, formulate, and solve engineering problems	✓

(f) an understanding of professional and ethical responsibility	
(g) an ability to communicate effectively	√
(h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context	
(i) a recognition of the need for, and an ability to engage in life-long learning	
(j) a knowledge of contemporary issues	√
(k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.	

Instructor:	Prof. Yahia Alhamed
Last updated :	January 2015