

<b>Department of Chemical Engineering</b>			
<b>Industrial Chemical Technology (64576)</b>			
<b>Total Credits</b>		<b>3</b>	
<b>major compulsory</b>			
<b>Prerequisites</b>		P1 : Unit Operations (64462) OR Unit Operation (64362) P2 : Practical Organic Chemistry (1) (23235)	
<b>Course Contents</b>			
<p>This course is the bridge to real engineering practice in any working place. The engineer will determine his roles in the company by learning different production and manufacturing processes. This course covers the manufacturing processes in our national industry. So that, our engineer must be familiar with surface coating industry, detergent and soap industry, food industry, adhesives, fermentation, pharmaceutical industry, fragrances, flavors, leather and many other industries</p>			
<b>Intended Learning Outcomes (ILO's)</b>		<b>Student Outcomes (SO's)</b>	<b>Contribution</b>
1	At the end of the course the students will be able to recognition of the need for and an ability to engage in life-long learning through Effectively collect, interpret and evaluate scientific data in multiple formats that lead to set and determine the operational steps of industrial chemical processes	I	40 %
2	At the end of the course the students will be able to apply the knowledge of chemistry and industrial technology to solve engineering problems	E	40 %
3	At the end of the course the students will be able to ensure that all manufacturing processes are performed in compliance with relevant, safety, and environmental law, and in accordance with ethical principles.	F	10 %
4	At the end of the course the students will be able to communicate effectively through preparing reports on a specific topic and present them orally	G	10 %
<b>Textbook and/ or References</b>			
Shreve's Chemical Process Industries, 5th edition, George T Austin, McGraw-Hill book company, 1984, ISBN 0-07-057147-3 (in case of ordering Ref.: Pharmaceutical Engineering, K Sambamurthy, New age international limited publishers, New Delhi, india, 2003			
<b>Assessment Criteria</b>		<b>Percent (%)</b>	
First Exam		20 %	
Second Exam		20 %	
Quizzes		5 %	
Projects		15 %	
Final Exam		40 %	
<b>Course Plan</b>			
<b>Week</b>	<b>Topic</b>		
1-2	Chemical engineering and the work of chemical engineer ,		
2-3	Water conditioning and environmental protection,		
4-5	Portland cements, and calcium salts,		
5-6	Surface coating Industries, First Exam		
7-8	Food and food by-product processing Industries,		

8-9	Agrichemical industries
10-11	Fragrances, Flavors and food additives Second exam
11-12	Soap and detergents
13-14	Fermentation Industry
15-16	Pharmaceutical Industry
16	Final exam