

Department of Chemical Engineering			
Soap and Detergent Manufacturing (64475)			
Total Credits	2		
major compulsory			
Prerequisites	P1 : Chemical Reaction Engineering (64320)		
Course Contents			
<p>This is an industry related course where students can learn more on how to manufacture soap and detergents. The course will also equip students with the chemistry behind soap, detergent and cosmetic emulsion manufacturing. Students will learn more about surfactants used in manufacturing soap and detergents. Household cleaning and disinfection products will be discussed in this course. The last topic to be discussed in this course is the mixing roles in soap and detergent manufacturing. All safety issues related to soap and detergent manufacturing steps will be covered. During the course, students will be asked to make visits to local chemical industry. Several assignments will be based on such visits. Students will apply what they learn in this course by carrying out experiments in the departments lab.</p>			
Intended Learning Outcomes (ILO's)		Student Outcomes (SO's)	Contribution
1	By the end of this course, the students will be able to apply knowledge of science in choosing the right surfactant and apply knowledge of engineering in choosing the right mixing device for producing detergents.	A	20 %
2	By the end of this course, the students will be able to design and conduct experiments in a team basis as well as interpret data related to detergent products to meet the desired needs of achieving good detergent quality products.	B	45 %
3	By the end of this course, the students will be able to recognize of the need for &an ability to engage in life-long learning for producing new detergent products	I	20 %
4	By the end of this course, the students will be able to acknowledge of contemporary issues related to detergent production.	J	15 %
Textbook and/ or References			
Liquid Detergent, edited by Kuo Yanna Lai, Taylor and Francis group, 2006, ISBN: 10: 0-8247-5835-8			
Assessment Criteria		Percent (%)	
Mid. Term Exam		20 %	
Projects		10 %	
Reports		20 %	
Laboratory Work		10 %	
Final Exam		40 %	
Course Plan			
Week	Topic		
1	Introduction		
2_4	Liquid Detergent: an overview Preliminary information including some definitions and elementary chemistry. Soap and detergent safety issues. What detergents have to do and how they do it. The roles of various ingredients and some principles of formulation.		
5_6	Light duty liquid detergent		

7-9	Heavy duty liquid detergent Midterm exam
10_1 2	Specialty Liquid Household Surface Cleaners
13_1 6	Techniques and skills needed for the Manufacture of Liquid Detergents