

Subject Description Form

Subject Code	ABCT2705
Subject Title	Chemistry Laboratory II
Credit Value	2
Level	2
Pre-requisite	General Laboratory Techniques and Safety
Co-requisite	Organic Chemistry I
Objectives	The aim of this module is to provide students with practical operation experience in organic chemistry. The reactions that taught in Organic Chemistry I provide the theoretical basis for this laboratory module
Intended Learning Outcomes	Upon completion of the subject, students will be able to: a. recognize the general aspect of safety in the organic chemistry laboratory b. aware the treatment of chemical waste generated by the practical sessions c. carry out basic laboratory operations such as recrystallization, simple and fractional distillation in an organized and planned manner d. record UV and IR spectra via standard procedure for analyzing the functional group of product from the experiment e. use GC for analyzing composition of products from the experiment f. correlate the experimental results with the theoretical aspects of the subject
Subject Synopsis/ Indicative Syllabus	<u>Indicative Title of Experiments</u> <ul style="list-style-type: none">• Substitution Reaction: Preparation of 3-Chloro-3-Methylpentane• Elimination Reactions(E2): Dehydrochlorination of 3-Chloro-3-Methylpentane• Elimination Reactions (E1): Dehydration of 3-Methyl-Pentan-3-ol• Preparation of Aspirin• Grignard Reaction: Preparation of Triphenylcarbinol
Teaching/Learning Methodology	Laboratory sessions are conducted with help of demonstrators; students are working as a team of two. Students are requested to complete the mechanism of reaction, molar ratio table, m.p./ b.p of the products as well as literature search before carrying out the laboratory work. The

	demonstrators will check the above pre-laboratory work and provide first hand technical help during the experimental sessions							
Assessment Methods in Alignment with Intended Learning Outcomes	Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)					
			a	b	c	d	e	f
	1. Laboratory reports	60	√	√	√	√	√	√
	2. Laboratory performance	20	√	√	√	√	√	√
	3. Practical Test	20	√	√	√	√	√	√
	Total	100 %						
<p>Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:</p> <p>The practical classes demand students to develop practical competence in performing chemical reactions safely and in an organized manner. Their skills will be assessed by their class performance and a practical test. The written skills and report presentation will be assessed by laboratory reports. Their reports should demonstrate their ability to perform standard physical / instrumental analysis of the organic products / samples.</p>								
Student Study Effort Expected	Class contact:							
	<ul style="list-style-type: none"> ▪ Laboratory class (3 hrs per session X 9 weeks) 		27 Hrs.					
	Other student study effort:							
	<ul style="list-style-type: none"> ▪ Pre-laboratory works 		18 Hrs.					
	<ul style="list-style-type: none"> ▪ Laboratory report preparation 		24 Hrs.					
	Total student study effort		69 Hrs.					
Reading List and References	Vogel, A.I., Vogel's Textbook of Practical Organic Chemistry 5 th ed, Wiley, 1989.							