

<b>Module code</b>	SC-2222		
<b>Module Title</b>	Functional Groups in Organic Chemistry		
<b>Degree/Diploma</b>	Bachelor of Science (Chemistry)		
<b>Type of Module</b>	Major Core		
<b>Modular Credits</b>	4	<b>Total student Workload</b>	10 hours/week
		<b>Contact hours</b>	4 hours/week
<b>Prerequisite</b>	None		
<b>Anti-requisite</b>	None		
<b>Aims</b>			
To provide students with knowledge on the fundamental principles of important functional groups in Organic Chemistry and to apply the theories, concepts and analytical ability in laboratory work.			
<b>Learning Outcomes</b>			
<i>On successful completion of this module, a student will be expected to be able to:</i>			
Lower order :	40%	<ul style="list-style-type: none"> <li>- recognize the different types of functional groups in organic chemistry</li> <li>- describe the preparation and reactions of organic compounds with different functional groups</li> </ul>	
Middle order :	50%	<ul style="list-style-type: none"> <li>- perform designated experiments during laboratory sessions</li> <li>- apply theories and concepts learnt in the interpretation of experimental observations and results</li> <li>- interpret IR, NMR, MS spectra</li> </ul>	
Higher order:	10%	<ul style="list-style-type: none"> <li>- present experimental reports in a clear and concise manner</li> <li>- work independently or collaboratively as a team</li> </ul>	
<b>Module Contents</b>			
<ul style="list-style-type: none"> <li>- Functional groups in organic chemistry: Alkyl halides, alcohols and phenols, aromatic compounds, aliphatic and aromatic amines, aryl diazonium salts</li> <li>- Organic polymers (chain growth and step growth) and their applications</li> <li>- Syntheses and reaction mechanisms: stereochemistry of substitution (<math>S_N1</math>, <math>S_N2</math>) and elimination (E1, E2) reactions, Electrophilic aromatic substitution, nucleophilic addition</li> <li>- Using various spectroscopic techniques to interpret different functional groups and identify structures of organic compounds</li> </ul>			
<b>Assessment</b>	Formative assessment	Weekly Tutorial Sessions and Discussion	
	Summative assessment	Examination: 60%	
		Coursework: 40% <ul style="list-style-type: none"> <li>- 3 Individual Practical Reports (20%)</li> <li>- 3 Individual Written Assignments (10%)</li> <li>- 3 Class Tests (10%)</li> </ul>	