Subject Description Form

Subject Code	FSN2001
Subject Title	Organic Chemistry for Food Science
Credit Value	3
Level	2
Co-requisite	FSN1004 Fundamentals of Modern Science in Food and Nutrition
Objectives	This subject intends to introduce students with principles of organic chemistry and their application to understanding the chemical behavior of organic and biologically active compounds in food.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: a. Understand the fundamental principles of organic chemistry based on food examples. b. Describe the bonding in and molecular structures of alkanes, alkenes, alkynes and alcohols as well as the types of hybridization and isomerism that occurs in the three groups of hydrocarbons. c. Recognise the major classes of organic reactions: substitution, elimination, and addition and the specificities of each. d. Explain how stereochemistry and the presence of functional groups influence the chemical properties of molecules, with focus on those of importance in food e. Demonstrate the abilities of problem-solving skills, analytical thinking and interpersonal skills.
Subject Synopsis/ Indicative Syllabus	Basic nomenclature, structure, synthesis, stereochemistry, and mechanisms of organic reactions, chemistry of organic compounds and their examples in food science: - Alkanes and cycloalkanes - Alkenes and Alkynes - Aromatic Compounds - Stereoisomerism - Halogen - Alcohols, Phenols and Thiols - Ethers and Epoxides - Aldehydes and Ketones - Carboxylic acids - Amines - Carbohydrates, Lipids and Proteins

<table>
<tr><td>Teaching/Learning Methodology</td><td>The course will utilize lectures to deliver essential principles and concepts across various organic chemistry topics, encompassing chemical functional groups, reactivity, reactions, reaction mechanisms, and spectroscopic analysis of organic compounds.

Tutorials will be provided to help students reinforce their understanding of the material, enhance their problem-solving abilities, and foster a deeper interest in the subject. Evaluation will encompass tests, assignments and a comprehensive written examination at the conclusion of the term.</td></tr>
<tr><td>Assessment Methods in Alignment with Intended Learning Outcomes</td><td>
<table>
<tr><td rowspan="2">Specific assessment methods/tasks</td><td rowspan="2">% weighting</td><td colspan="5">Intended subject learning outcomes to be assessed (Please tick as appropriate)</td></tr>
<tr><td>a</td><td>b</td><td>c</td><td>d</td><td>e</td></tr>
<tr><td>1. Assignment</td><td>20%</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td></tr>
<tr><td>2. Quizzes</td><td>30%</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td></tr>
<tr><td>3. Examination</td><td>50%</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td></tr>
<tr><td>Total</td><td>100 %</td><td></td><td></td><td></td><td></td><td></td></tr>
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Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

Quizzes and assignment will be used to assess the students' ability to understand the lecture materials including chemical functional groups, chemical reactivity and reaction mechanisms.</td></tr>
<tr><td>Student Study Effort Required</td><td>
<table>
<tr><td>Class contact:</td><td></td></tr>
<tr><td>Lecture</td><td>26 Hrs.</td></tr>
<tr><td>Tutorial</td><td>13 Hrs</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Other student study effort:</td><td></td></tr>
<tr><td>Self study</td><td>70 Hrs.</td></tr>
<tr><td>Assignment</td><td>18 hrs</td></tr>
<tr><td>Total Study Effort:</td><td>127 Hrs</td></tr>
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</td></tr>
<tr><td>Reading List and References</td><td>Textbook:
Hart H et al. Organic Chemistry (13th Ed). Cengage.
Reference:
Carey F. Organic Chemistry (12th Ed). McGraw Hill.
L.G. Wade, Jr., Organic Chemistry (9th Ed). Pearson.</td></tr>
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