

Subject Description Form

Subject Code	ABCT1D04/ABCT1101																																
Subject Title	Introductory Life Science																																
Credit Value	3																																
Level	1																																
Pre-requisite / Co-requisite/ Exclusion	No pre-requisite																																
Objectives	In this subject, students will be introduced to the very basic background knowledge and concepts in biology, together with some recent advances in biotechnology. The main aim of this subject is to arouse students' interest in biological developments so that they can appreciate the impact of biotechnology.																																
Intended Learning Outcomes	Upon completion of the subject, students will be able to: (a) have a basic understanding of the biological world (b) appreciate the importance of the biological world to human (c) appreciate the recent biotechnological advancement and their impacts																																
Subject Synopsis/ Indicative Syllabus	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 80%;"></th> <th style="text-align: right; width: 20%;">Contact Hours</th> </tr> </thead> <tbody> <tr> <td>The basics of life forms:</td> <td style="text-align: right;">6 Hrs</td> </tr> <tr> <td>(1) The different forms of biological organisms, i.e. Viruses, Bacteria, Protozoa, Algae, Fungi, Plants, Animals</td> <td></td> </tr> <tr> <td>(2) The involvement of these different organisms in our daily life and the importance of ecology and biodiversity.</td> <td></td> </tr> <tr> <td>The organization and functions of complex biological organisms:</td> <td style="text-align: right;">6 Hrs</td> </tr> <tr> <td>(1) The structure and functions of plants and the importance of plants</td> <td></td> </tr> <tr> <td>(2) The structure and functions of animals – human as an example</td> <td></td> </tr> <tr> <td>(3) Organization of tissues, organs and functional systems in human</td> <td></td> </tr> <tr> <td>The cell:</td> <td style="text-align: right;">6 Hrs</td> </tr> <tr> <td>(1) The building blocks of biological organisms</td> <td></td> </tr> <tr> <td>(2) Structure and functions of Subcellular organelles</td> <td></td> </tr> <tr> <td>(3) Different types of cells</td> <td></td> </tr> <tr> <td>(4) Cell division and proliferation</td> <td></td> </tr> <tr> <td>The heredity:</td> <td style="text-align: right;">6 Hrs</td> </tr> <tr> <td>(1) The genetic material; General structure of DNA and RNA</td> <td></td> </tr> <tr> <td>(2) The genetic information in the form of genes</td> <td></td> </tr> </tbody> </table>		Contact Hours	The basics of life forms:	6 Hrs	(1) The different forms of biological organisms, i.e. Viruses, Bacteria, Protozoa, Algae, Fungi, Plants, Animals		(2) The involvement of these different organisms in our daily life and the importance of ecology and biodiversity.		The organization and functions of complex biological organisms:	6 Hrs	(1) The structure and functions of plants and the importance of plants		(2) The structure and functions of animals – human as an example		(3) Organization of tissues, organs and functional systems in human		The cell:	6 Hrs	(1) The building blocks of biological organisms		(2) Structure and functions of Subcellular organelles		(3) Different types of cells		(4) Cell division and proliferation		The heredity:	6 Hrs	(1) The genetic material; General structure of DNA and RNA		(2) The genetic information in the form of genes	
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	<p>(3) Expression of genetic information (4) Passing of genetic information to offspring</p> <p>Modern biotechnology: 6 Hrs</p> <p>(1) Major developments: <i>In vitro</i> fertilization; Gene cloning; GM foods; GM organisms; Human genome project; Gene therapy; Stem cell therapy; Human cloning</p> <p>(2) Impacts of biotechnology on our life and the environment</p> <p>(3) Ethical, social and legal issues</p>																																																						
<p>Teaching/Learning Methodology</p>	<p>In the lectures, the basic concepts and knowledge will be delivered to the students. These knowledge and concepts will be further enhanced through tutorial exercises, discussions and debates during tutorials, and through assessments.</p>																																																						
<p>Assessment Methods in Alignment with Intended Learning Outcomes</p>	<table border="1" data-bbox="480 824 1428 1301"> <thead> <tr> <th rowspan="2">Specific assessment methods/tasks</th> <th rowspan="2">% weighting</th> <th colspan="6">Intended subject learning outcomes to be assessed (Please tick as appropriate)</th> </tr> <tr> <th>a</th> <th>b</th> <th>c</th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>1. Written assessment I</td> <td>15%</td> <td>✓</td> <td>✓</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2. Written assessment II</td> <td>20%</td> <td>✓</td> <td>✓</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3. Written assignment</td> <td>15%</td> <td>✓</td> <td>✓</td> <td>✓</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4. End of subject exam</td> <td>50%</td> <td>✓</td> <td>✓</td> <td>✓</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Total</td> <td>100 %</td> <td colspan="6"></td> </tr> </tbody> </table> <p>Each student will be required to read broadly and to complete a written assignment in which an understanding of some of the major concepts and knowledge has to be demonstrated. In this written assignment, a student will also need to express his/her critical evaluation of the impacts of a new development in biotechnology. This assignment will be in the form of a critical review essay.</p> <p>A student will also need to take two tests (Written assessments I & II) which will gauge their learning outcomes at two separate stages of the subject. These assessments will also allow students to get feedbacks on their performance and how well they are achieving the learning outcomes.</p> <p>There will also be an end of subject assessment which will assess all of the four learning outcomes. This will most likely be in the form of an examination.</p>	Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)						a	b	c				1. Written assessment I	15%	✓	✓					2. Written assessment II	20%	✓	✓					3. Written assignment	15%	✓	✓	✓				4. End of subject exam	50%	✓	✓	✓				Total	100 %						
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	Total student study effort	119Hrs.
Reading List and References	Eric J. Simon, Jean L. Dickey, Jane B. Reece Campbell Essential Biology with Physiology Fifth Edition Pearson 2014	