# Subject Description Form

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| **Subject Code** | ABCT2329 |
| **Subject Title** | Systemic Physiology |
| **Credit Value** | 3 |
| **Level** | 2 |
| **Pre-requisite / Co-requisite/ Exclusion** | Pre-requisite:<br>Human Physiology or equivalent |
| **Objectives** | To instill into students an understanding of the normal functioning of the human body with emphasis on physiological mechanisms above introductory level, and introduce the various control mechanisms of the body to instill an appreciation of the integrative nature in the operation of the different body systems in health and illness |
| **Intended Learning Outcomes** | Upon completion of the subject, students will be able to:<br>a. demonstrate understanding of the normal functioning of the human body systems above introductory level;<br>b. demonstrate understanding of the various controlling mechanisms of the body, such as neural regulation on cardiovascular functions and chemical control on respiration<br>c. show awareness of the integrative nature in the operation of the different body systems for survival and adaptation in health and illness;<br>d. interpret and analyze data obtained in physiological measurements, such as cardiovascular and hemodynamic values, respiratory parameters and assessment on renal function. |
| **Subject Synopsis/ Indicative Syllabus** | Cardiovascular system: Control of cardiac functions; haemodynamics; components and properties of blood; structure and function of the lymphatic system.<br>Respiratory system: External respiration and lung mechanics; exchange of gases in alveoli and tissues; transport of blood gases; chemical control of ventilation.<br>Renal system: Organization of the urinogenital system; structure of a typical nephron; basic renal processes; regulation of sodium and water balance; regulation of electrolyte balance.<br>Immune system: Different type of immune cells; innate and adaptive immune responses, recognition of self and "non-self", roles of antibodies and complement pathways; active and passive immune response.<br>Endocrine system: Organization of the endocrine system; classification of hormones; controlling mechanisms of hormone secretion; function of selected hormones; anatomical and physiological link between the endocrine and nervous systems.<br>Digestive system: Processes of digestion and absorption; hepatobiliary and pancreatic functions; neural and endocrine control of the digestive processes. |

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<tr><td>Teaching/Learning Methodology</td><td>
<u>Lecture</u><br>
Lectures are conducted to provide students with the knowledge related to the high-level features and operation of different body systems, and to discuss the integration of body systems in different physiological aspects.<br><br>
<u>Tutorial</u><br>
Tutorials are conducted to help students understand and reinforce the knowledge of physiological controlling mechanisms in human body that are essential to life. The tutorials include the discussions on physiological functions of different body systems in Q&A formats.<br><br>
<u>Practical</u><br>
Laboratory sessions are conducted to help students understand and reinforce the knowledge of selected physiological controlling mechanisms in human body that are essential to life. Laboratory reports are required to be submitted by all students after each experiment to demonstrate their analytical skills and understanding on the subject matters.
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<tr><td>Assessment Methods in Alignment with Intended Learning Outcomes</td><td>
<table>
<tr><td rowspan="2">Specific assessment methods/tasks<br>50% continuous;<br>50% examination</td><td rowspan="2">% weighting</td><td colspan="4">Intended subject learning outcomes to be assessed</td></tr>
<tr><td>a</td><td>b</td><td>c</td><td>d</td></tr>
<tr><td>1. Coursework</td><td>50%</td><td>√</td><td>√</td><td>√</td><td>√</td></tr>
<tr><td>2. Examination</td><td>50%</td><td>√</td><td>√</td><td>√</td><td></td></tr>
<tr><td>Total</td><td>100%</td><td colspan="4"></td></tr>
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<u>Coursework</u><u>:</u><br><br>
(a) <u>Test</u><br>
It is used to assess students' knowledge at the mid-term in the recall, comprehension and application aspects.<br><br>
(b) <u>Laboratory Report</u><br>
It is used to assess students' analytical skills, team work, peer learning and critical thinking during the experiments and explanation of subject matters in a format of written report.<br><br>
<u>Examination:</u><br>
It is used as a summative assessment to examine students' ability to recall, comprehend, analyze and apply the knowledge of physiology to the specific systems.
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<tr><td>Student Study Effort Expected</td><td>
<table>
<tr><td>Class contact:</td><td></td></tr>
<tr><td>▪ Lecture</td><td>24 Hrs</td></tr>
<tr><td>▪ Tutorial</td><td>6 Hrs</td></tr>
<tr><td>▪ Laboratory</td><td>9 Hrs</td></tr>
<tr><td>Other student study effort:</td><td></td></tr>
<tr><td>▪ Pre-reading</td><td>20 Hrs</td></tr>
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| | ▪ Preparation for tests and final exam | 30 Hrs |
| | ▪ Preparation for written assignment | 20 Hrs |
| | Total student study effort: | 112 hours |
| **Reading List and References** | Textbooks:<br><br>Human Physiology (2019) 15th Ed. Fox SI. Publisher: McGraw Hill.<br><br>Martini FH, Nath JL and Bartholomew EF. (2017). *Fundamentals of Anatomy and Physiology* (11th ed.). Pearson, ISBN 10: 0134396022.<br><br>Widmaier E.P., Raff H., Strang K.T. (2019) *Vander's Human Physiology: The Mechanisms of Body Function* (15th ed). New York: McGraw-Hill | |