SUBJECT OUTLINE

Subject Name: Introduction to Health Sciences
Subject Code: BIOH011

SECTION 1 – GENERAL INFORMATION

Award/s: Non Award
Total Course Credit Points: N/A
Level: N/A
Duration: 1 Semester
Subject Coordinator: Dr Avni Pepe (Melbourne Campus)
Subject is: Elective
Subject Credit Points: 2

Student Workload:

<table>
<thead>
<tr>
<th>No. timetabled hours per week:</th>
<th>No. personal study hours per week:</th>
<th>Total hours per week:</th>
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<tbody>
<tr>
<td>3</td>
<td>2</td>
<td>5</td>
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Delivery Mode:
Face to Face (On Campus):
- 1 x 2 hour lecture
- 1 x 1 hour tutorial and practical activities

e-Learning (Online):
- Narrated PowerPoint presentations
- Tutorials: Asynchronous tutor moderated discussion forum and activities
- Student handouts, web-based resources

Intensive Delivery (Summer School):
- Contact hours are delivered over 3 weeks with 2 x 6.5 hour days delivered per week
- Content: Week 1 - Sessions 1-6; Week 2 - Sessions 7-9; Week 3 - Sessions 10-13
- Assessment: Study Skills Plan & Reflection – Weeks 1 & 4; Online Quiz – Week 2; Online Short Answer Questions – Weeks 2, 3 & 4

Pre-requisites: Nil
Co-requisites: Nil

SECTION 2 – ACADEMIC DETAILS

Subject Rationale
This subject will explain some general biology-related study skill strategies and provide students with an introduction to the gross anatomy and physiology of the human body. The subject will explore chemistry needed for life, the structure and function of cells and basis of genetics and inheritance. The emphasis on understanding...
the cellular level will be used as foundation knowledge for studies into other levels of organisations – from tissues to systems. The systems covered in this subject include integumentary, musculoskeletal, nervous, endocrine, cardiovascular, respiratory, immune, digestive, urinary and reproductive systems.

### Learning Outcomes

1. Identify a variety of study skills strategies that can be used to formulate a personalised approach to health science studies.
2. Identify the body’s main functional chemistry and broadly describe the pathways from which they are derived.
3. Define the structure and function of cells and tissues.
4. Describe the gross anatomy of major organ systems of the human body, including integumentary, musculoskeletal, nervous, endocrine, cardiovascular, respiratory, immune, digestive, urinary and reproductive systems.
5. Describe the main physiological function(s) of major organ systems.

### Assessment Tasks

<table>
<thead>
<tr>
<th>Type</th>
<th>Learning Outcomes Assessed</th>
<th>Session Content Delivered</th>
<th>Due</th>
<th>Weighting</th>
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<tbody>
<tr>
<td>Study Skills Plan &amp; Reflection</td>
<td>1</td>
<td>1</td>
<td>Weeks 2 &amp; 15</td>
<td>20% (2 x 10%)</td>
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<tr>
<td>(2 x 300 words)</td>
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<tr>
<td>Online Quiz</td>
<td>2-3</td>
<td>3-6</td>
<td>Week 7</td>
<td>20%</td>
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<tr>
<td>Online Short Answer Questions</td>
<td>4-5</td>
<td>7-9, 10-11 &amp; 12-13</td>
<td>Weeks 10, 12 &amp; 14</td>
<td>60% (3 x 20%)</td>
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<td>(3 x 500 words)</td>
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All written assessments and online quizzes are due at 11:55 p.m. and submitted through the LMS.

### Prescribed Readings:


Recommended Readings:

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<tr>
<th>Week</th>
<th>Lectures</th>
<th>Tutorials / Practicals</th>
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</thead>
</table>
| 1.   | **Introduction** (Subject Outline / Subject Aims / Assessment / Teaching Resources)  
**Biology Study Skills**  
- Study strategies in biology | Activities are developed to allow the students to explore relevant concepts, expand on ideas and have peer and lecturer interaction. Activities also allow for formative assessment and feedback.  
- Discussion: What study strategies do you use for studying |
| 2.   | **Language of Biology, Homeostasis and Health**  
- Anatomy and physiology  
- Basic life functions  
- Prefixes and suffixes  
- Anatomical position  
- Directional and regional terms  
- Levels of structural organisation  
- Homeostasis  
- Physical dimension of health |  
- Picture-language association module  
- Tutorial: Practice the language of biology using prefixes and suffixes  
- Homeostasis, health and disease – example of stress response |
| 3.   | **Life Chemistry**  
- Inorganic compounds (water, salt, acid, base)  
- Organic compounds (protein, carbohydrates, lipids, nucleic acids)  
- Energy molecules (ATP and NADPH) |  
- Tutorial: Understand how chemistry is used by the body; models of molecules  
- Discussion: Linking chemistry with biology |
| 4.   | **Cells**  
- What are cells and why do we have them?  
- Basic anatomy and physiology of a generalised cell |  
- Fluorescent microscopy: Insight into the anatomy of a cell – video resource  
- Fluorescent microscopy: Examples of specialised cells – video resource  
- Discussion: Relating structure to function of specialised cells |
5. **Genetics**
- DNA and RNA: Molecules of genetics
- Definition of gene as a hereditary unit
- Gene-protein link
- Inheritance of traits

6. **Tissues and Integumentary System**
- Four principal tissue types structure and function
- Integumentary system gross anatomy and physiology

7. **Musculoskeletal System and Movement**
- Bone cells function
- Skeletal system gross anatomy and physiology
- Muscle cell function
- Muscular system gross anatomy and physiology
- Movement - principal function of the musculoskeletal system

NON-TEACHING WEEK (note that make-up classes may be scheduled in this week)

**Semester 1** – This aligns with the week after Easter so it may fall between Weeks 6 to 8

**Semester 2 & Online students** – The non-teaching week falls between Weeks 7 and 8

8. **Nervous System**
- Nerve cell gross anatomy and function
- Neurotransmitters as messengers
- Gross anatomy and physiology of nervous system – CNS, PNS, ANS and ENS

9. **Endocrine System**
- Hormones as messengers
- Gross anatomy of endocrine system
- Introduction to axis and humoral (direct) regulation

10. **Cardiovascular and Respiratory Systems**
- Blood cells: Red blood cells (RBC)
- Gross anatomy of cardiovascular system

**Tutorial:**
- What are they and why do we have genes?: model of DNA and RNA molecules; genetics and inheritance
- Why can you have different colour eyes from your parents?: Human Genome project – why should you care?: what is epigenetics?
- What are they and why do we have genes?
- Tutorial: Understanding specialised cells; use of virtual technologies to learn anatomy of musculoskeletal system and visualise specific movement
- Tutorial: Use of virtual technologies to understand the nervous system; highways of information regulated by the nervous system
- Tutorial: Humoral vs axis regulation examples
- Tutorial: Understanding anatomy of the heart and blood vessels and flow of oxygenated vs non-oxygenated blood
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<tr>
<th>Topic</th>
<th>Subtopics</th>
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| 11. Immunity | Blood cells: White blood cells (WBC)  
Immune cells: B cells and T cells  
Immune response types as body defences |
| 12. Digestive System | Gross anatomy of digestive system  
Food metabolism |
| 13. Urinary and Reproductive Systems | Gross anatomy and physiology of urinary system  
Gross anatomy and physiology of reproductive systems |
| 14. Non-Teaching Week/Practical Examination Week 1 | Note that make-up classes may be scheduled in this week |
| 15. Non-Teaching Week/Practical Examination Week 2 | Note that make-up classes may be scheduled in this week |
| 16. Final Examination Week 1 | There is no final exam for this subject. |
| 17. Final Examination Week 2 | There is no final exam for this subject. |