

Unit Outline (Higher Education)

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|----------------------------|---|
| Institute / School: | Institute of Innovation, Science & Sustainability |
| Unit Title: | Systems Biology |
| Unit ID: | SCBIO1020 |
| Credit Points: | 15.00 |
| Prerequisite(s): | Nil |
| Co-requisite(s): | Nil |
| Exclusion(s): | (HEALT1111 and HEALT1112 and HEALT1121 and HEALT1122) |
| ASCED: | 010913 |

Description of the Unit:

This unit introduces students to the anatomy and physiology of the body. It focuses on anatomy (structure) from the cellular to the organ level of arrangement and how cells, tissues and organs work together to maintain physiology (function). Major concepts in cellular and subcellular biology are revised before understanding cellular function and arrangement into tissues, tissue function and arrangement into organs, and how organs work together both as part of separate systems and in cooperation with each other (integration).

Grade Scheme: Graded (HD, D, C, P, MF, F, XF)

Work Experience:

No work experience

Placement Component: No

Supplementary Assessment: Yes

Where supplementary assessment is available a student must have failed overall in the Unit but gained a final mark of 45 per cent or above, has completed all major assessment tasks (including all sub-components where a task has multiple parts) as specified in the Unit Description and is not eligible for any other form of supplementary assessment.

Course Level:

| Level of Unit in Course | AQF Level of Course | | | | | |
|-------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | 5 | 6 | 7 | 8 | 9 | 10 |
| Introductory | <input type="checkbox"/> | <input type="checkbox"/> | ✓ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Intermediate | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Advanced | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Learning Outcomes:

Knowledge:

- K1.** Identify and describe the cellular and histological structure of major tissues.
- K2.** Identify the major components of and describe the function of each of the organ systems individually.
- K3.** Outline the ways in which the different systems integrate with each other to maintain homeostasis.

Skills:

- S1.** Classify the different tissue types and describe their functions.
- S2.** Explain the relationships between structure and function of vertebrate tissues
- S3.** Demonstrate ability to conduct and or observe laboratory experiments and report the outcomes
- S4.** Present scientific findings to an audience of peers.
- S5.** Collect and record anatomical and physiological data.

Application of knowledge and skills:

- A1.** Apply anatomy and physiology knowledge to the evaluation and measurement of vertebrate specimens in normal states, making comparisons and contrasts where appropriate.
- A2.** Interpret and report on anatomical and physiological data.
- A3.** Be able to interpret and report on anatomical and physiological data.

Unit Content:

Topics may include:

1. Introduction to cells, tissues and molecular biology.
2. Reproductive systems.
3. Musculoskeletal system.
4. Heart and Circulation.
5. Immune and Lymphatic system.
6. Endocrine system.
7. Nervous System.
8. Respiratory system.
9. Digestive system.
10. Renal system.
11. Integumentary System

FEDTASKS

Federation University Federation recognises that students require key transferable employability skills to prepare them for their future workplace and society. FEDTASKS (**T**ransferable **A**tttributes **S**kills and **K**nowledge) provide a targeted focus on five key transferable Attributes, Skills, and Knowledge that are embedded within curriculum, developed gradually towards successful measures and interlinked with cross-discipline and Co-

operative Learning opportunities. *One or more FEDTASK, transferable Attributes, Skills or Knowledge must be evident in the specified learning outcomes and assessment for each FedUni Unit, and all must be directly assessed in each Course.*

| FEDTASK attribute and descriptor | | Development and acquisition of FEDTASKS in the Unit | |
|---|--|---|-----------------------|
| | | Learning Outcomes (KSA) | Assessment task (AT#) |
| FEDTASK 1 Interpersonal | Students will demonstrate the ability to effectively communicate, inter-act and work with others both individually and in groups. Students will be required to display skills in-person and/or online in: <ul style="list-style-type: none"> • Using effective verbal and non-verbal communication • Listening for meaning and influencing via active listening • Showing empathy for others • Negotiating and demonstrating conflict resolution skills • Working respectfully in cross-cultural and diverse teams. | Not applicable | Not applicable |
| FEDTASK 2 Leadership | Students will demonstrate the ability to apply professional skills and behaviours in leading others. Students will be required to display skills in: <ul style="list-style-type: none"> • Creating a collegial environment • Showing self-awareness and the ability to self-reflect • Inspiring and convincing others • Making informed decisions • Displaying initiative | Not applicable | Not applicable |
| FEDTASK 3 Critical Thinking and Creativity | Students will demonstrate an ability to work in complexity and ambiguity using the imagination to create new ideas. Students will be required to display skills in: <ul style="list-style-type: none"> • Reflecting critically • Evaluating ideas, concepts and information • Considering alternative perspectives to refine ideas • Challenging conventional thinking to clarify concepts • Forming creative solutions in problem solving. | Not applicable | Not applicable |
| FEDTASK 4 Digital Literacy | Students will demonstrate the ability to work fluently across a range of tools, platforms and applications to achieve a range of tasks. Students will be required to display skills in: <ul style="list-style-type: none"> • Finding, evaluating, managing, curating, organising and sharing digital information • Collating, managing, accessing and using digital data securely • Receiving and responding to messages in a range of digital media • Contributing actively to digital teams and working groups • Participating in and benefiting from digital learning opportunities. | Not applicable | Not applicable |

| FEDTASK attribute and descriptor | | Development and acquisition of FEDTASKS in the Unit | |
|--|---|---|-----------------------|
| | | Learning Outcomes (KSA) | Assessment task (AT#) |
| FEDTASK 5 Sustainable and Ethical Mindset | Students will demonstrate the ability to consider and assess the consequences and impact of ideas and actions in enacting ethical and sustainable decisions. Students will be required to display skills in: <ul style="list-style-type: none"> • Making informed judgments that consider the impact of devising solutions in global economic environmental and societal contexts • Committing to social responsibility as a professional and a citizen • Evaluating ethical, socially responsible and/or sustainable challenges and generating and articulating responses • Embracing lifelong, life-wide and life-deep learning to be open to diverse others • Implementing required actions to foster sustainability in their professional and personal life. | Not applicable | Not applicable |

Learning Task and Assessment:

| Learning Outcomes Assessed | Assessment Tasks | Assessment Type | Weighting |
|--|--|--------------------------------|-----------|
| K1, K2, K3, S1, S2, S3, S4, S5, A1, A2, A3 | Practical activities, worksheets and written reports | Worksheets and written reports | 20-40% |
| K1, K2, K3, S1, S2, S4, A1, A2, A3 | Tutorial-assessed activities exploring aspects of vertebrate anatomy and physiology in greater depth | Short answer moodle quizzes | 10-30% |
| K1, K2, K3, S1, S2, A1, A2, A3 | Students will be examined on their knowledge of the unit material. | Test | 40-60% |

Adopted Reference Style:

APA ()

Refer to the [library website](#) for more information

Fed Cite - [referencing tool](#)