Course Outline (Higher Education)

School: School of Science, Psychology and Sport

Course Title: SYSTEMS BIOLOGY

Course ID: SCBIO1020

Credit Points: 15.00

Prerequisite(s): Nil

Co-requisite(s): Nil

Exclusion(s): (HEALT1111 and HEALT1112)

ASCED: 010999

Description of the Course :

This course 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, etc.)

Work Experience:

No work experience: Student is not undertaking work experience in industry.

Placement Component: No

Supplementary Assessment: Yes

Where supplementary assessment is available a student must have failed overall in the course but gained a final mark of 45 per cent or above and submitted all major assessment tasks.

Program Level:

Level of course in Program	AQF Level of Program					
	5	6	7	8	9	10
Introductory			✔			
Intermediate						
Advanced						

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. Review the major concepts in each system and record these in written format.
A2. Apply anatomy and physiology knowledge to the evaluation and measurement of vertebrate specimens in normal states.
A3. Be able to interpret and report on anatomical and physiological data.

Course Content:

Topics may include:

- Introduction to cells, tissues and molecular biology.
- Reproductive systems.
- Musculoskeletal system.
- Heart and Circulation.
- Immune and Lymphatic system.
- Endocrine system.
- Nervous System.
- Respiratory system.
- Digestive system.
- Renal system.
- Integumentary System

Values:

V1. Appreciate the levels of complexity and integration within biological systems.
V2. Recognise the need to understand basic cellular biology and cellular organisation before understanding gross aspects of anatomy and physiology.
V3. Recognise the need to understand normal human structure and function before progressing to understanding disease (pathophysiology 1+2).
V4. Continuous learning and self-reliance through combining scientific knowledge and critical thinking to associate form with function in the human body and understanding of basic biological concepts contributing to these skills.
V5. Engaged citizenship through the application of critical thinking and problem solving skills in the linking form with function, and understanding of basic biological concepts contributing to these skills.

Graduate Attributes

The Federation University FedUni graduate attributes (GA) are entrenched in the Higher Education Graduate Attributes Policy (LT1228). FedUni graduates develop these graduate attributes through their engagement in explicit learning and teaching and assessment tasks that are embedded in all FedUni programs. Graduate attribute attainment typically follows an incremental development process mapped through program progression. **One or more graduate attributes must be evident in the specified learning outcomes and assessment for each FedUni course, and all attributes must be directly assessed in each program**

Graduate attribute and descriptor		**Development and acquisition of GAs in the course**			
		Learning Outcomes (KSA)	**Code** A. Direct B. Indirect N/A Not addressed	**Assessment task (AT#)**	**Code** A. Certain B. Likely C. Possible N/A Not likely
GA 1 Thinkers	Our graduates are curious, reflective and critical. Able to analyse the world in a way that generates valued insights, they are change makers seeking and creating new solutions.	S1, S2, S3, A2, A3, K1, K2, K3,	A, A, A, A, B, A, A, A	AT1, AT2, AT3, AT4	A, A, A, A,
GA 2 Innovators	Our graduates have ideas and are able to realise their dreams. They think and act creatively to achieve and inspire positive change.	A3	B	AT3	C
GA 3 Citizens	Our graduates engage in socially and culturally appropriate ways to advance individual, community and global well-being. They are socially and environmentally aware, acting ethically, equitably and compassionately.	Not applicable	Not applicable	Not applicable	Not applicable
GA 4 Communicators	Our graduates create, exchange, impart and convey information, ideas, and concepts effectively. They are respectful, inclusive and empathetic towards their audience, and express thoughts, feelings and information in ways that help others to understand.	A1, S4, K2,	A, A, A	AT2, AT3	A, A
GA 5 Leaders	Our graduates display and promote positive behaviours, and aspire to make a difference. They act with integrity, are receptive to alternatives and foster sustainable and resilient practices.	Not applicable	Not applicable	Not applicable	Not applicable

Learning Task and Assessment:

Learning Outcomes Assessed	Learning Tasks	Assessment Type	Weighting
K1, K2, K3, S1, S2, S3, S5, A1,A2, A3	Practical activities, worksheets and written reports	Worksheets and written reports	20-40%
K2, K3, S4, S5, A2, A3	Physiology-focused project investigating aspects of either human or vertebrate animal physiology	Project plan and final Presentation	10-30%
K1, K2, K3, S1, A1	Students will be examined on their knowledge of the course material.	Test	40-60%

Adopted Reference Style:

Australian Harvard