Unit Outline (Higher Education)

Institute / School:	Institute of Innovation, Science & Sustainability
Unit Title:	Nutrition and Metabolism
Unit ID:	SCBCH2002
Credit Points:	15.00
Prerequisite(s):	(SCBCH2001 and SCCHM1000) OR (SCCHM1001)
Co-requisite(s):	Nil
Exclusion(s):	Nil
ASCED:	010901

Description of the Unit:

The unit begins with a general overview of nutrient uptake, metabolism and bioenergetics. This is followed by a comprehensive survey of cellular metabolism including the generation of energy from major dietary components: carbohydrate, protein and lipid; the biosynthesis of carbohydrates, lipids and nucleotides; and amino acid metabolism. The integration and control of cellular biochemistry and the role of hormones in metabolic regulation is emphasised. The importance of balanced nutrition, and the consequences of nutritional imbalance, are highlighted.

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						
Intermediate			✔			
Advanced						

Learning Outcomes:

Knowledge:

K1. Identify the role of nutrients as metabolic fuels.
K2. Describe the processes of digestion, absorption and transport of nutrients.
K3. Explain the mechanisms involved in the storage and processing of metabolic fuels.
K4. Explain how metabolic processes are integrated and regulated.
K5. Discuss the metabolic pathways that operate in the fed and fasted states.

Skills:

S1. Analyse and interpret experimental data.
S2. Locate, interpret, evaluate and communicate biochemical information.

Application of knowledge and skills:

A1. Suggest why specific metabolic process dysfunctions, and dietary imbalances, lead to disease.
A2. Critically evaluate scientific and popular literature.

Unit Content:

Topics may include:
1. Digestion and absorption of key metabolic fuels, i.e. carbohydrates, lipids and proteins.
2. Mammalian metabolism: anabolic and catabolic pathways.
3. Electron transport systems and energy generation.
4. Integration and regulation of metabolism; tissue specific metabolism.
5. Metabolic perturbations associated with dietary imbalance.
6. The role of hormones in metabolic control.

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**ttributes **S**kills and **K**nowledge) provide a targeted focus on five key transferable Attributes, Skills, and Knowledge that are be 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: • 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: • 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: • 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: • 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 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: • 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-K5	Recall and comprehension of key information	Test	40-60%
S1, S2, A1, A2, and any of K1-K5	Metabolic case studies	Written and/ or oral responses, working independently and in small groups	20-30%
S2, A1, A2, and any of K1-K5	Research and reporting on a specified topic in metabolic biochemistry	Written Assignment	15-25%
S2, A1, K1 - K5	Understanding and recall of key information	Quizzes	0-15%

Adopted Reference Style:

Australian Harvard ()

Refer to the library website for more information

Fed Cite - referencing tool