NATS 3046 ADVANCED PHYSIOLOGY

Credit Points 10

Legacy Code 301355

Coordinator Sabine Piller (https://directory.westernsydney.edu.au/search/name/Sabine Piller/)

Description From 2020 this unit replaces 300851 - Advanced Physiology. Physiology is the study of the way in which a living organism and its bodily parts function. This unit will examine integrative aspects of physiological control mechanisms comprising multiple organ systems and mechanisms of adaptation to environmental factors. It will focus on regulatory function of ion channels, neurophysiology, sensory physiology, motor control, metabolism, cardiovascular and respiratory systems. Students will have the opportunity to independently research, in depth, an area of physiology pertinent to their interest.

School Science

Discipline Medical Science

Student Contribution Band HECS Band 2 10cp

Check your HECS Band contribution amount via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

Level Undergraduate Level 3 subject

Pre-requisite(s) NATS 1010 OR
BIOS 2006

Equivalent Subjects BIOS 3016 - Human Physiology LGYA 5938 - Topics in Physiology BIOS 3002 - Advanced Physiology

Assumed Knowledge

Demonstrated sound understanding of physiological systems of the human body.

Learning Outcomes

On successful completion of this subject, students should be able to:

1. Describe the major (principle) ion channels present in organisms, and evaluate their functional significance in regulating body function under normal and pathological conditions (e.g. channelopathies).
2. Explain the function of sensory organs, neural encoding, processing and analysis of sensory information, particularly in the context of motor control and perception.
3. Examine how sensorimotor mechanisms are implemented in motor control strategies.
4. Evaluate the interaction between organ systems in achieving optimal regulation of the body function during exercise.
5. Analyse the role of homeostasis in adaptation to a wide range of living conditions, food sources and extreme environments.
6. Create, deliver, and peer evaluate oral presentations competently.

Subject Content

1. Exercise Physiology
2. Exercise Metabolism
3. Electrophysiology, ion channels, channelopathies;
4. Sensory physiology;
5. Motor control mechanisms;
6. Examples of the most recent discoveries and research trends in the field of physiology.

Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Item	Length	Percent	Threshold	Individual/ Group Task
Independent Investigation Topic: Oral presentation with assessed draft submission	Oral presentation: 10 minutes	20	N	Individual
Participation in laboratory practical classes, including completion of post-practical quizzes	Lab Quizzes 15 minutes	15	N	Individual
Midterm open book on-line exam	40 minutes	15	N	Individual
Online Final examination	2 hours	50	N	Individual

Prescribed Texts

- Neuroscience, 6th edition (2019). Purves, D., Augustine, G.J., Fitzpatrick, D., Hall, W.C., LaMantia, A.-S., McNamara, J.O., & White, L.E. Sinauer Associates, Inc. Sunderland, Massachusetts. ISBN 978-0-87893-695-3

Teaching Periods

Spring

Campbelltown

Day

Subject Contact Sabine Piller (https://directory.westernsydney.edu.au/search/name/Sabine Piller/)

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=NATS3046_22-SPR_CA_D#subjects)

Parramatta - Victoria Rd

Day

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