Unit Outline (Higher Education)

Institute / School:	Institute of Health and Wellbeing
Unit Title:	FUNCTIONAL HUMAN ANATOMY
Unit ID:	EXSCI2172
Credit Points:	15.00
Prerequisite(s):	(HEALT1111 and HEALT1112)
Co-requisite(s):	Nil
Exclusion(s):	Nil
ASCED:	010913

Description of the Unit:

This unitenables students to study the structures and kinesiological functions of the musculoskeletal system of the human body.

Knowledge of functional anatomy can be applied in a variety of settings/situations and the unit will equip students with the fundamental skills to apply their knowledge in analysing discrete phases in an activity or exercise and identify the major muscular contributors to each joint movement. The unit will also equip them with the skills to administer and interpret flexibility, range of motion, anthropometric measurements and perform postural analysis.

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

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 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:

On successful completion of the unit the students are expected to be able to:

Knowledge:

K1. Define and describe the structures and kinesiological functions of the musculoskeletal system of the human body.

K2. Describe the biomechanical properties of human tissue and structures.

K3. Explain how human tissue and structures respond to loading, disuse, overuse, and ageing.

K4. Recognise the principles of posture and balance control.

K5. Discuss the role of body proportions in sports performance and talent identification.

Skills:

S1. Demonstrate accurate identification and location of selected anatomical landmarks.

S2. Conduct musculoskeletal movement analysis.

S3. Analyse and evaluate posture and balance control.

S4. Identify common errors in body alignment and movement mechanics during exercise.

S5. Demonstrate the skills required to undertake accurate anthropometric measurements.

Application of knowledge and skills:

A1. Analyse common exercise movements for main muscles groups, identifying progressions and regressions.

A2. Administer and interpret results from flexibility, range of motion and anthropometric measurements, comparing to normative values as required.

Unit Content:

Skeletal considerations for Movement

- Biomechanical characteristics of bone, cartilage, ligaments & tendons
  - Function
  - Composition
  - Macroscopic structure
  - Formation
  - Disease, injury and aging
- Mechanical properties of bone, cartilage, ligaments & tendons
  - Strength and stiffness
  - Load – compression, tension, shear, bending, torsion

Muscular considerations for movement

- Muscle tissue properties
- Functions of muscle
- Force generation in muscle
- Role of muscle

- Force-velocity relationships

Neurologic considerations for movement

- General organisation of nervous system
- Motor-neurons
- Sensory receptors and reflexes
- Effect of training and exercise

Functional anatomy and anthropometry

- Common anthropometric measurement
- Linear anthropometry and indices
- Somatotyping
- Body composition and talent identification

Functional anatomy of upper extremity

- Shoulder complex
- Elbow and radioulnar joints
- Wrist and fingers
- Muscular actions
- Conditioning
- Injury potential
- Effects of aging

Functional anatomy off lower extremity

- Pelvic girdle and hip complex
- Knee joint
- Ankle and foot
- Muscular actions
- Conditioning
- Injury potential
- Effects of aging

Functional anatomy of the trunk

- Vertebral column
- Muscular actions
- Conditioning
- Injury potential
- Effects of aging

Learning Task and Assessment:

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
S1 - S5, A1, A2	Attendance and participation in laboratory sessions to develop competency in the conduct of specific practical skills.	90% attendance required to satisfy ongoing formative assessment of practical skills	S/U
K1 - K5, A1, A2	Self-directed study of weekly class content. Ongoing weekly summative assessment of theoretical and practical concepts explored throughout the unit.	Summative assessment using lab-based or written/online tests during semester.	20-40%

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K1, S1 - S5, A1, A2	Summative assessment of practical skills to demonstrate competency.	Practical Exam	30-40%
K1 - K5, A1, A2	Self-directed study of entire unit content.	Final Theory Test	30-40%

Alignment to the Minimum Co-Operative Standards (MiCS)

The Minimum Co-Operative Standards (MiCS) are an integral part of the Co-Operative University Model. Seven criteria inform the MiCS alignment at a Course level. Although Units must undertake MiCS mapping, there is NO expectation that Units will meet all seven criteria. The criteria are as follows:

1. Co-design with industry and students
2. Co-develop with industry and students
3. Co-deliver with industry
4. FedTASK alignment
5. Workplace learning and career preparation
6. Authentic assessment
7. Industry-link/Industry facing experience

MiCS Course level reporting highlights how each Course embraces the principles and practices associated with the Co-Operative Model. Evidence of Course alignment with the MiCS, can be captured in the Course Modification Form.

MICS Mapping has been undertaken for this Unit No

Date:

Adopted Reference Style:

APA

Refer to the library website for more information

Fed Cite - referencing tool