



Biomedical Engineering

Graduate Course Outline

ANAT 7014 – Functional Human Anatomy

COURSE OUTLINE

COURSE DESCRIPTION: The goal of this course is to introduce students to the basic structure and function of the human musculoskeletal and neurological systems. The emphasis of this course will be both theoretical and practical, with topics being divided into 2 modules (each consisting of lectures, and where feasible, labs).

COURSE LOCATION

Bannatyne Campus

JCB Grant Conference

Room 131 Basic Medical Science Building

SCHEDULE: (subject to slight changes)

Date	Topic
Week 1 January 10, 2018 14.00-16.30	Neuroanatomy: Nervous System Overview – function and structure
Week 2 January 17, 2018 14.00-16.30	Neuroanatomy: Sensory Nervous System – function and structure
Week 3 January 24, 2018 14.00-16.30	Neuroanatomy: Motor Nervous System – function and structure
Week 4 January 31, 2018 14.00-16.30	Gross Anatomy Lab session – Neuroanatomy
Week 5 February 7, 2018 14.00-16.30	Quiz #1
Week 6 February 14, 2018 14.00-16.30	Anatomical terms; structure and function of bone, joints, muscle, tendons & ligaments.
Week 7 February 21, 2018 14.00-16.30	Musculoskeletal Anatomy - Upper & Lower Limbs – function and structure
Week 8 February 28, 2018 14.00-16.30	Musculoskeletal Anatomy - Axial Skeleton – function and structure
Week 9 March 7, 2018 14.00-16.30	Gross Anatomy Lab session – Musculoskeletal System
Week 10 March 14, 2018 14.00-16.30	Quiz #2
Week 11 March 21, 2018 13.00-17.30	Student Presentations

RESOURCES:

TEXTBOOKS

- Agur, A.M.R., Dalley, A.F. (2013). *Grant's atlas of anatomy* (13th ed.). Baltimore MD: Lippincott Williams & Wilkins.
- Basmajian, J.V. & De Luca, C.J. (1985). *Muscles alive: their functions revealed by electro-myography* (5th ed.). Baltimore MD: Williams & Wilkins.
- Kandel, E.R., Schwartz, J.H., Jessell, T.M. (2000). *Principles of neural science* (4th ed.). New York NY: McGraw-Hill.
- Lundy-Ekman, L. (2013). *Neuroscience: Fundamentals for rehabilitation* (4th ed.). St. Louis MO: Elsevier Saunders.
- Moore, K.L., Agur, A.M.R., Dalley, A.F. (2011). *Essential clinical anatomy* (4th ed.). Baltimore MD: Lippincott Williams & Wilkins.
- Moore, K.L. & Persaud, T.V.N. (2008) *The developing human: Clinically oriented anatomy* (8th ed.). Philadelphia PA: Saunders Elsevier.

ELECTRONIC RESOURCES

- Anatomy TV: <http://www.anatomy.tv.proxy2.lib.umanitoba.ca/home.aspx>
- The Brain: <http://thebrain.mcgill.ca/>

GROSS ANATOMY LAB

You will need (available from the Health Sciences Bookstore)

- a full-length lab coat or surgical scrubs and
- a pair of nitrile gloves

EVALUATION:

1. Quizzes (2 x 30% = 60%) – There will be two quizzes, one after the musculoskeletal anatomy section and one after the neuroanatomy section. Each quiz will consist of multiple choice questions, matching questions, and short answer questions.
 2. Assignments (2 x 10% = 20%) – There will be two assignments, one after the neuroanatomy section (due on week 5) and one after the musculoskeletal anatomy section (due on week 10). The assignments will be based on a journal article related to musculoskeletal anatomy and neuroanatomy, respectively.
 3. Presentation (20%) – In consultation with course instructors, the student will select a topic related to anatomy. The student will be required to give a 15-minute presentation of the topic. There will be a 5-minute question period following the presentation. Presentations will be graded on content, organization, and the student's knowledge of the topic.
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COURSE COORDINATORS:

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- Phone: 204-789-3788

VOLUNTARY WITHDRAW:

MARCH 16, 2018

REQUIREMENTS/REGULATIONS

Student Responsibilities: It is the responsibility of each student to contact the instructor if he/she is uncertain about his/her standing in the course and about his or her potential for receiving a failing grade. Students should also familiarize themselves with Sections 4 and 6 of the Regulations dealing with incomplete term work, deferred examinations, and attendance and withdrawal.

- **Lectures:** Attendance at lectures is essential for successful completion of this course. Students must satisfy each evaluation component in the course.

ACADEMIC INTEGRITY:

Students are expected to conduct themselves in accordance with the highest ethical standards of the Profession of Engineering and evince academic integrity in all their pursuits and activities at the university. As such, in accordance with the General Academic Regulations and Requirements of the University of Manitoba, Section 7.1, students are reminded that **plagiarism* or any other form of cheating** is subject to serious academic penalty (e.g. suspension or expulsion from the faculty or university) regardless of media

- examinations
- assignments
- laboratory reports
- term exams

A student found guilty of contributing to cheating in examinations or term assignments is also subject to serious academic penalties

- ***Plagiarism:** to steal and pass off (the ideas or words of another) as one's own; use (another's production) without crediting the source
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