

**Instructor:** Jamie Johnston  
**Phone:** 220-3649  
**Email:** johnston@kin.ucalgary.ca  
**Office:** KNB 420  
**Office Hours:** By apt

**Room:** SB 146  
**Days:** T/Thurs  
**Time:** 9:30-10:45  
**Course Website:** Blackboard

**TA:** Jason Robertson  
**Phone:** 220-4899  
**Email:** jwrobert@ucalgary.ca  
**Office:** KNB 219  
**Office Hours:** T/Thurs: 11:00 – 12:00

**Course Description:**

The course provides an introduction to neurophysiology with emphasis on motor control. Topics include: organization of the central nervous system; reflexes; integration of sensory information; experimental approaches to study the neurophysiology of movement. The first part of the course provides background of anatomy and physiology of the central nervous system and neuromuscular control of movement. This background will be the foundation for the second part of the course that will focus on major disorders of the neuromuscular system.

**Course Objectives:**

Upon completion of this course the student will know:

- 1) The anatomy and physiology of the human sensory and motor systems
- 2) The role of sensorimotor integration and reflexes in movement
- 3) Experimental approaches to the study of movement neurophysiology

and be able to apply this knowledge to better understand motor behaviors and movement disorders.

**Required Reading Materials:**

Readings from the literature will be provided via Blackboard and used to study specific topics in depth.

**Contacting the Instructor:**

Students requiring assistance are encouraged to speak with their instructor during class or office hours. Should you wish to meet with the instructor outside of office hours, please phone or email the instructor to make an appointment.

Email, while commonly used, does limit the effectiveness of communications and may not be the best way for instructors to answer student questions. Therefore, the instructor may request a telephone call or personal meeting. Your instructor will inform you as to his/her expectations about emails.

## Grading Scale:

Grade	Percent	Grade Point Value	Description
A+	97-100	4.00	Outstanding
A	94-96	4.00	Excellent - superior performance, showing comprehensive understanding of subject matter.
A-	90-93	3.70	
B+	87-89	3.30	
B	84-89	3.00	Good-clearly above average performance with knowledge of subject matter generally complete.
B-	80-83	2.70	
C+	77-79	2.30	
C	74-76	2.00	Satisfactory – basic understanding of the subject matter. Grade point average below 2.00 is not sufficient for promotion.
C-	70-73	1.70	<b>Minimum grade required if needed as a prerequisite course.</b>
D+	65-69	1.30	
D	60-64	1.00	Minimal pass – marginal performance; generally insufficient preparation for subsequent courses in the same subject.
F	<60	0	Fail – unsatisfactory performance or failure to meet course requirements.

## Evaluation of Course Content:

### EXAMS

Three exams: Exam #1 on the Functional Anatomy of the Central Nervous System; Exam #2 on Motor units, musculo-skeletal system, and sensory systems; Exam #3 on reflexes, motor behaviors and disorders. All exams will consist of multiple choice and short answers.

### PRESENTATION (see assignment on Blackboard for specifics)

- a) **Proposal:** Each group must submit typed on a sheet of paper three neuromuscular disorders (not scheduled to be discussed in class) that your group finds interesting for a presentation to be done at the end of term.
  - The instructor must approve the topic before you begin preparation
- b) **Bibliography List.** Submit a list of twenty references that your group has collected to read in preparation for your presentation.
  - At most 5 of these references may be book chapters or review articles, the rest must be experimental papers. Copies of these papers/book chapters will be turned in at the time of the presentation.

**NOTE: Handwritten proposals or bibliographies will cost the presentation grade 5% points.**

- b) **Presentation.** After surveying the articles from your bibliography, your group will create a powerpoint presentation (see assignment) and present it to the class.

<b>COURSE EVALUATION:</b>	<b>KNES 353</b>
Exam #1:	200 pts (20%)
Exam #2:	200 pts (20%)
Exam #3:	200 pts (20%)
Final Cumulative Exam:	200 pts (20%)
Presentation	<u>200 pts (20%)</u>
	<b>1000 pts</b>

**DUE DATES:**

Group Proposal (due in class).....	Sept 25
Exam #1 .....	Sept 27
Bibliography (due in class) .....	Oct 25
Exam #2 .....	Nov. 1
Presentations .....	Nov 15 – Nov 29
Exam #3 .....	Dec 6
Final Exam .....	Scheduled during the official exam period (December 10-19, 2012) and set by the Registrar's Office.

**Late Policy:** If either the type-written proposal or bibliography are not turned in on the due date during the class period, 3% will be deducted from the group's presentation grade for each day late

**Final Examination:** **The Final Exam will be cumulative**

**Course Content:**

Sept. 11	Overview of the course. <b>Lecture 1:</b> Introduction to Neurophysiology Functional Anatomy of the Central Nervous System I: Neurons: Structure and Function
Sept. 13	Overview of the course. <b>Lecture 1:</b> Introduction to Neurophysiology Functional Anatomy of the Central Nervous System I: Neurons: Structure and Function
Sept. 18	<b>Lecture 2:</b> Functional Anatomy of the Central Nervous System II: Brain and Spinal cord.
Sept. 20	<b>Lecture 3:</b> Functional Anatomy of the Central Nervous System III: Nervous System Pathways and Connections
Sept. 25	<b>Lecture 4:</b> Brain Imaging Exam #1 Review  <b><i>Proposal Due</i></b>
Sept 27	<b>Exam #1: Functional anatomy of the Central Nervous System</b>
Oct. 2	<b>Lecture 5:</b> Overview of the Musculoskeletal system structure-function & Recording of Muscle Activity
Oct. 4	<b>Lecture 5:</b> Overview of the Musculoskeletal system structure-function & Recording of Muscle Activity
Oct. 9	LAB KNB 2223/ <b>Lecture 6:</b> Mechanical Properties of Muscles
Oct. 11	LAB KNB 2223/ <b>Lecture 6:</b> Mechanical Properties of Muscles

Oct. 16	Guest Lecture
Oct. 18	Video
Oct. 23	<b>Lecture 7: Sensory Systems</b>
Oct. 25	<b>Lecture 8: Connectivity Patterns: Reflexes &amp; Control Loops</b> <b><u>Bibliography Due</u></b>
Oct. 30	<b>Lecture 8 Cont.</b> <b>Exam #2 Review</b>
Nov. 1	<b>Exam #2: Motor units, Muscle Properties, Sensory systems, Reflexes</b>
Nov. 6	<b>Lecture 9: Motor Behaviors</b>
Nov. 8	<b>Lecture 10: Motor Disorders: Parkinsons Disease, Multiple Sclerosis</b>
Nov. 13	Reading Week
Nov. 15	Student Presentations
Nov. 20	Student Presentations
Nov. 22	Student Presentations
Nov. 27	Student Presentations
Nov. 29	Student Presentations Exam #3 Review
Dec. 4	<b>Exam #3: Motor Behaviors and Motor Disorders</b>
Dec. 6	Final Exam Review
EXAM WEEK , TBA -Scheduled by Registrar's Office	Final Cumulative Exam

## Supplementary Course Information

*In accordance with the University of Calgary Calendar*

### Instructor Responsibilities

Each instructor responsible for a course is required to make a course outline available to each student no later than first meeting date for the course. It is expected that the outline will be available as a Web based document or through the learning management system (i.e. Blackboard). If it is not, a paper version of the outline will be handed out to every student at the first meeting of the class, and made available for those unable to attend the first class. Printing of course outlines can be obtained through Laura Styler, Assistant Administrator [lstyler@ucalgary.ca](mailto:lstyler@ucalgary.ca).

### Academic Accommodation Awareness Information:

It is the student's responsibility to request academic accommodation. If you are a student with a documented disability who may require academic accommodation and have not registered with the Disability Resource Centre, please contact their office at 220-8237. You are also required to discuss your needs with your instructor no later than fourteen (14) days after the commencement of this course. Students who have not registered with the Disability Resource Centre are not eligible for formal academic accommodation.

### Plagiarism/Cheating/Other Academic Misconduct: (see Calendar)

A single offence of cheating, plagiarism, or other academic misconduct is a serious act that will not be tolerated in the Faculty of Kinesiology. Penalties for such acts will be determined by the Dean and may result in a failing grade, probation, suspension, or expulsion. Any student who is uncertain if an action falls into this category should consult the instructor and/or the Calendar.

### Midterm Exam Policy:

The Faculty of Kinesiology policy is that all students are expected to write midterm exams on the dates listed on the course outline. Special accommodation may be granted by the instructor in exceptional circumstances only which include illness, participation in athletic events (varsity, national or international), domestic affliction, and religious conviction. It is the student's responsibility to supply proper documentation and/or notification prior to the originally scheduled midterm to support their circumstance. Personal travel plans and arrangements are not valid reasons for requesting a special accommodation for a midterm exam. Failure to comply with this policy will result in a grade of zero for the midterm and possible failure in the course.

### FOIP Policy:

Please note that the University is under the jurisdiction of the provincial Freedom of Information and Protection of Privacy (FOIP) Act. Please refer to the website for details: <http://www.ucalgary.ca/secretariat/privacy>

### Internet and Electronic Communication Device Information:

Any surfing of the Internet during lectures that is not directly related to the class discussion is distracting and strictly forbidden. Additionally, the use of any electronic devices (e.g., cellular phones, Blackberrys) for e-mailing, texting, etc. is strictly prohibited. Please turn OFF your phone before the beginning of each lecture.

Instructors have the authority, at the discretion of the dean of their faculty, to require that specific course assignments, term papers and academic exercises be submitted in an electronic format. Instructors cannot require that multiple copies

of an assignment be submitted.

**Emergency  
Evacuation/Assembly  
Points:**

For classes in the Kinesiology buildings Primary assembly point is the MacEwan Student Centre - North Courtyard and the Alternate assembly point is University Theatres Lobby

**Safewalk Information:**

Safewalk volunteers walk people safely to their destination on campus (including Health Sciences, Children's Hospital, McMahon Stadium, and University LRT station). This service is free and available to students, staff and campus visitors. Call 403-220-5333 (24 hours a day/7 days a week/365 days a year).

**Student's Union:**

The Kinesiology Representative is Calindy Ramsden - Phone: 220-2913 or E-mail: [kinesrep@su.ucalgary.ca](mailto:kinesrep@su.ucalgary.ca).