

Selected Topics in Kinesiology I

Biomedical Physio and Kines 420

Section: D100

Term: 2014 Summer

Instructor: Damon Poburko

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Office hours: TBA

Discussion Topics: COURSE DESCRIPTION:

This course will discuss advanced and current topics in vascular physiological, with a focus on cell structure and signal transduction pathways, related methods in current research and relevance to human health. Students will applying concepts discussed on lectures to the analysis of problems and literature analysis in tutorial sessions.

VECTOR: 420 2-1-0, 807 2-1-0 (plus discussion group)

COURSE TIMES & LOCATION: Tu 10:30 12:20

TUTORIAL TIMES & LOCATION: Tu 12:30-1:20, 1:30-2:20

COURSE CONCEPT MAP:

DETAILED LECTURE SCHEDULE

Wk 01 Introduction, review of vessel structure, mechanics and basic physics of the vasculature.

Wk 02 Myofilaments & smooth muscle plasticity/stretch adaptation

Wk 03 Angiogenesis & Vasculogenesis

Wk 04 Calcium dependent and calcium-independent regulation of smooth muscle contraction

Wk 05 Endothelial regulation of tone

Wk 06 Mitochondria in the regulation of intracellular signalling

Wk 07 Mid-term exam & preparation for research projects / presentations

Wk 08 Extracellular matrix & Mechanotransduction

Wk 09 Central and peripheral neurogenic vasoregulation:

Wk 10 Autoregulation & vasomotion

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Wk 11 Vascular remodelling

Wk 12 Current topics in vascular medicine: Diabetes & Blood pressure

Wk 13 Current topics in vascular medicine: Obesity & Blood pressure

CANVAS:

We will be handling the distribution and collection course materials and assignments, announcements, polls and discussions using SFUs new content management system CANVAS (canvas.sfu.ca). Please log into CANVAS to familiarize yourself with the layout of the course. Please note that students will be responsible to monitoring CANVAS and are advised to adjust their notification settings accordingly.

Grading: COURSE LEARNING OUTCOMES:

By the end of the semester students will be able to...

relate key concepts of vascular physiology and cell biology to a variety of vascular diseases

describe signalling pathways that regulate majors functions of each cell type in the vascular wall and interactions between different cell types

determine appropriate methods to assess vascular function in health and disease

communicate an analysis of current issues in vascular (patho)physiology using written and oral methods appropriate for scientific discourse.

assess value of cardiovascular research to self and society

EVALUATION:

Required Texts:

Recommended Texts: PREREQUISITES (420): BPK(KIN) 305

PREREQUISITES (807): Admission to the Department of Biomedical Physiology and Kinesiology graduate program or permission of the instructor. An undergraduate degree in a physiology or health science field is recommended.

Materials/Supplies: READINGS: literature articles,
custom course materials

Prerequisite/Corequisite: PREREQUISITES (420): BPK(KIN) 305

PREREQUISITES (807): Admission to the Department of Biomedical Physiology and Kinesiology graduate program or permission of the instructor. An undergraduate degree in a physiology or health science field is recommended.

Notes: ENROLLEMENT: 25-35 UG, 2-5 GS

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GRADING SCALE:

COMMUNICATIONS: (email / phone)

The use of email to communicate with the instructor and/or teaching assistants is welcome and encouraged. Emails sent on a business day will usually be responded to within 48 hours if not on the next business day. For example, an email sent at the end of the day on Friday may not be returned until Monday or shortly after. Please use emails respectfully and recognize that all emails are a permanent record. In some instances, the instructor or TA may suggest that a response to an email may be best served through a telephone discussion.

Students who miss examinations due to exceptional circumstances (such as serious illness or compassionate reasons) are required to obtain a physician's certificate, whereby the physician states that you were unable to write your midterm or final on the set date due to a medical condition beyond your control, or other supporting documents in order to obtain consideration in the course. Such documents must be filed with the Department Chair (via the Biomedical Physiology and Kinesiology office) or Registrar within four calendar days of the date on which the examination was to have been written. Exceptional circumstances must be approved by the Undergraduate Program Committee in order for a student to receive consideration. Students must check the examination schedule when making course selections. Students are reminded that final examinations may be scheduled at any time during the examination period and that students should avoid making travel or employment arrangements for this period. In the event of a missed midterm or final examination Dr. Poburko reserves the right to give an oral examination of the material.

ACADEMIC HONESTY AND STUDENT CONDUCT

Academic honesty is a condition of continued membership in the University community. Academic dishonesty, including plagiarism or any other form of cheating is subject to serious academic penalty. The University codes of student conduct and academic honesty are contained in policies T10.01 and T10.02 which are available in the Course Timetable and on the Web via <http://www.reg.sfu.ca>.

This outline is derived from a course outline repository database that was maintained by SFU Student Services and the University's IT Services Department. The database was retired in 2014 and the data migrated to SFU Archives in 2015.