

## Department of Biology Course Outline

SC/BIOL 4510 / HH/KINE 4510 3.00: Cellular and Molecular Basis of Muscle Physiology Fall 2015

### Course Description

Topics include muscle development, muscle-specific gene expression, molecular basis of muscle contraction, biochemical plasticity of muscle, sarcolemmal and nuclear signal transduction in muscle. Three lecture hours per week. One term.

### Prerequisites

Prerequisite(s): AS/HH/SC/KINE 2011 3.00, or SC/BIOL 3060 4.00 and SC/BIOL 3070 4.00. Course credit exclusions: None.

### Course Instructors and Contact Information

Dr. Robert Tsushima – Course Director (sensei@yorku.ca)  
Farquharson Building, Room 333A  
Dr. Roozbeh Sobbi - r.aschar.sobbi@utoronto.ca

### Schedule

Tuesday 7:00 – 10:00 pm LSB 103

### Evaluation

Midterm Test 1 25%

Material covered from September 15 – September 29

Midterm Test 2 25%

Material covered from October 6 – October 27

Written Assignments 15%

Students will be required to read research papers and submit written summaries of the papers – due before class.

Final Examination 35%

Non-cumulative (**\*\*\*except for those students who missed any midterm tests**)

Material covered from November 3 – December 1

Please note the exam date is determined by the Registrar's Office not me!

### Important Dates

Midterm Test 1: **TUESDAY OCTOBER 13** (in class)

Midterm Test 2: **TUESDAY NOVEMBER 10** (in class)

## Resources

There is no assigned textbook. All material (lecture notes, reading material) will be posted on Moodle.

## Learning Outcomes

N/A

## Course Content

TOPICS THAT WE WILL COVER:

1. DNA basics: history, chemical composition and physical properties of nucleic acids
2. RNA structures and functional RNAs
3. DNA topology and topoisomerases
4. DNA synthesis and replication
5. Methods for studying DNA and molecular biology techniques
6. Genome organization/packaging of prokaryotes and eukaryotes
7. Organization, dynamics and regulation of interphase genomes
8. Regulation of genome replication
9. Chromatin and histone modifications
10. Epigenetics and regulation of gene expression

## Experiential Education and E-Learning

**Class Forum:** I will set up a class discussion forum on Moodle. It is open to all students in class and is meant for you to post questions or requests to one other. As the course director, I will **NOT** participate in the forum discussions. Any lecture-related questions for me should be asked by email (see above) or in person before, during, or after class.

## Other Information

1. READ/REVIEW the lectures notes PRIOR to class
2. Ask questions during the class. I will NOT answer questions immediately after the class.  
*At 10:00 pm, I'm outta here!*
3. REVIEW/STUDY notes well in advance of exams. I do NOT meet with students on the day of exams and will not answer questions after 5:00 pm the day before any test.

## Course Policies

Any requests for remarking of exams must be dealt with by the Course Director within 14 days of the item being returned. Any discrepancy after that period will not be considered. Any exam written in pencil or where liquid paper was used will be not re-evaluated.

There are no deferred midterm exams. *Anyone who misses a midterm exam and receives approval from the Course Director, the percent weighting and material from the missed midterm will be put on the Final Exam.*

Midterm exams are **not** optional.

**1)** The student must contact the Course Director in person by email within **48 hours** of the missed examination. The student must clearly state the following:

- full name
- student number, course and section
- reason for missing the test

**2)** If the student cannot contact the course director during this 48-hour period, documentation in writing accounting for the delay **must** be provided.

**3)** Appropriate documentation verifying the circumstances for the missed test or examination must be provided within **two weeks** following the missed test. Failure to provide appropriate documentation to the course director will result in a grade of zero for the missed test.

*What is appropriate documentation?*

**a) Medical circumstances** – exams missed due to medical circumstances must be supported by an attending physician's statement or a statement by a psychologist or counselor. The physician's statement **must** include the following:

- i. full name, mailing address, telephone number of the physician.
- ii. state the nature of the illness and its duration (i.e., specific dates covered), and
- iii. an indication of whether the illness and/or medication prescribed would have

SERIOUSLY affected the student's ability to study and perform over the period in question.

**NOTE:** the physician's office may be contacted to verify that the form was completed by the physician.

**b) non-medical circumstances** – exams missed due to non-medical circumstances must be supported by appropriate documentation, i.e., death certificates, obituary notice, automobile accident reports, airline/bus ticket/receipt for emergency travel (with date of booking on ticket), etc. Airline/train/bus ticket/receipts for emergency travel must indicate destination, departure, and return dates. Having to work at the time of the exam or forgetting the room number are not considered to be valid excuses for missing the exam.

**4)** The manner in which the missed test (which has been legitimately documented) is handled will be at the discretion of the course director.

\*\*\* You should be aware that if you miss the tests before the official drop date, you will not have the requisite 10% feedback on your course work to determine if you need to drop the

## University Policies

### Academic Honesty and Integrity

York students are required to maintain the highest standards of academic honesty and they are subject to the Senate Policy on Academic Honesty (<http://secretariat-policies.info.yorku.ca/policies/academic-honesty-senate-policy-on/>). The Policy affirms the responsibility of faculty members to foster acceptable standards of academic conduct and of the student to abide by such standards.

There is also an academic integrity website with comprehensive information about academic honesty and how to find resources at York to help improve students' research and writing skills, and cope with University life. Students are expected to review the materials on the Academic Integrity website at - <http://www.yorku.ca/academicintegrity/>

### Access/Disability

York University is committed to principles of respect, inclusion and equality of all persons with disabilities across campus. The University provides services for students with disabilities (including physical, medical, learning and psychiatric disabilities) needing accommodation related to teaching and evaluation methods/materials. These services are made available to students in all Faculties and programs at York University.

Student's in need of these services are asked to register with disability services as early as possible to ensure that appropriate academic accommodation can be provided with advance notice. You are encouraged to schedule a time early in the term to meet with each professor to discuss your accommodation needs. Please note that registering with disabilities services and discussing your needs with your professors is necessary to avoid any impediment to receiving the necessary academic accommodations to meet your needs.

Additional information is available at the following websites:

Counselling & Disability Services - <http://cds.info.yorku.ca/>

Counselling & Disability Services at Glendon - <http://www.glendon.yorku.ca/counselling/personal.html>

York Accessibility Hub - <http://accessibilityhub.info.yorku.ca/>

### Ethics Review Process

York students are subject to the York University *Policy for the Ethics Review Process for Research Involving Human Participants*. In particular, students proposing to undertake research involving human participants (e.g., interviewing the director of a company or government agency, having students complete a questionnaire, etc.) are required to submit an *Application for Ethical Approval of Research Involving Human Participants* at least one month before you plan to begin the research. If you are in doubt as to whether this requirement applies to you, contact your Course Director immediately.

### Religious Observance Accommodation

York University is committed to respecting the religious beliefs and practices of all members of the community, and making accommodations for observances of special significance to adherents. Should any of the dates specified in this syllabus for an in-class test or examination pose such a conflict for you, contact the Course Director within the first three weeks of class. Similarly, should an assignment to be completed in a lab, practicum placement, workshop, etc., scheduled later in the term pose such a conflict, contact the Course director immediately. Please note that to arrange an alternative date or time

for an examination scheduled in the formal examination periods (December and April/May), students must complete an Examination Accommodation Form, which can be obtained from Student Client Services, Student Services Centre or online at

[http://www.registrar.yorku.ca/pdf/exam\\_accommodation.pdf](http://www.registrar.yorku.ca/pdf/exam_accommodation.pdf) (PDF)

### **Student Conduct in Academic Situations**

Students and instructors are expected to maintain a professional relationship characterized by courtesy and mutual respect. Moreover, it is the responsibility of the instructor to maintain an appropriate academic atmosphere in the classroom and other academic settings, and the responsibility of the student to cooperate in that endeavour. Further, the instructor is the best person to decide, in the first instance, whether such an atmosphere is present in the class. The policy and procedures governing disruptive and/or harassing behaviour by students in academic situations is available at - <http://secretariat-policies.info.yorku.ca/policies/disruptive-and-or-harassing-behaviour-in-academic-situations-senate-policy/>