

## BIOB11 H3S - Molecular Aspects of Cellular and Genetic Processes

Summer 2019

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**Instructor:** Daman Bawa

**Office:** SW542 (not used for office hours)

**E-mail:** [bawa@utsc.utoronto.ca](mailto:bawa@utsc.utoronto.ca)

**Teaching Assistant:** Diana Bonea

**Course Coordinator:** Jennifer Campbell

**Office Hours:** Mondays 12 PM – 2 PM or by appointment. **Office hours will be held in library room AC254.**

**Please be prepared and consult lecture materials and online sources prior to coming to the office.** Appointments outside these hours can be arranged by e-mail for personal matters or emergencies. If office hours need to be changed over the course of the semester, it will be posted on Quercus.

**Lecture:** Monday and Thursday 10:00 AM - 12:00 PM, Room: AC223

**Tutorials:** Dates will be posted on Quercus.

**Pre-requisites:** BIOB10H3

**Exclusions:** BIOB10Y, BIO230H, BIO250Y

The best way to reach me outside the office hours is by e-mail. **Please use your UTSC or UTORONTO e-mail account** and include your course code in the subject.

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**Course Textbook:** **Karp's Cell and Molecular Biology: Concepts and Experiments – J. Iwasa and W. Marshall; 8<sup>th</sup> Edition, Wiley Publishers.** If you have an older edition, it can be used, however, you are responsible for matching the figures and material presented in lectures to your particular edition. **This is the same textbook as BIOB10H3.**

There are other textbooks that are available in the library course reserve and *can be used as a reference only*. You may find reading subjects by different authors will help clarify difficult concepts. The publishers also have on-line resources for their texts that you may find useful.

**Online Course Resources:** The following information / resources will be available on Quercus through your UTORid login:

- The course syllabus that includes course description, schedule and other details.
- Contact information for the instructor, TAs and the course coordinator
- Important announcements regarding all aspects of the course will be posted under the ‘Announcement’ section of the course and it is students’ responsibility to check them regularly.
- Lecture material any supplemental material related to the lectures

**Email Policies:** The email policies for the course are as follows:

- Please only use your UTSC/UToronto email address for correspondence. Emails received from other sources will not be answered.
- Include your course code in the email subject line
- Your name and student number must be included in the email
- TA should not be contacted regarding grades or details of course material unless specified otherwise in the lectures.
- **You should contact the course coordinator regarding:**
  - **Course prerequisites or exclusions**
  - **Exam conflicts**
  - **Missing / missed exams**
  - **Viewing graded exams outside the dedicated hours**
  - **Marks verification for the exams**

**Please do not contact the course coordinator for lecture related materials.**

- I will try to reply to the emails as soon as I can (except weekends); however, if the question cannot be answered via email, I will ask the student to attend my office hours.

**Lectures:** Lectures will be held on Mondays and Thursdays with each two-hour part being covered from 10 AM – 12 PM. There is a lot of material covered in this course; therefore, it is imperative that you review and keep up with the course material in order to do well. Reviewing the chapter summaries and answering the questions will greatly help you understand the material as well.

**Video recording of the lectures is not permitted.**

## Evaluations:

| Test                      | Material   | Date                              | % of Final Grade |
|---------------------------|--|-----------------------------------|------------------|
| Midterm exam<br>(2 hours) | Based on material covered before the exam date   | Wednesday, July 24<br>5 PM – 7 PM | 45               |
| Final exam<br>(3 hours)   | <b>Cumulative</b> , with emphasis on second half of the course.<br><b>All course material will be tested (lectures 1-12)</b> | TBA                               | 55               |

**\* Note:** The final exam may be held on a Friday night or Saturday. If there are any changes required due to any unforeseen circumstances, the information will be posted on Quercus as soon as possible.

Marks for each test and exam will be posted on Quercus and can be accessed via the course web page. It is each student's responsibility to check her/his grade and to resolve any problems **within 1 week of posting**.

## Midterms:

The exams will be a combination of multiple choice, fill-in-the-blanks and short answers. Students who cannot write a midterm due to schedule conflicts or appointments **may arrange to write the test beforehand** with valid proof of conflict or medical needs. Students who miss the midterm must provide valid documentation (for example, UTSC medical certificate) and inform me and the course coordinator by e-mail before the exam or **within 48 hours** of the exam. **Students will only be allowed to write the makeup midterm upon receipt of valid documentation.**

## Final Exam:

**The final exam will be multiple choice only** and will be held during the final exam period. Students who miss the final exam must petition the Registrar for permission to write a makeup exam. This is not determined by the instructor. The Registrar will schedule a makeup exam that will be held at a later date.

## Accessibility:

If you have a disability/health consideration that may require accommodations, please feel free to contact me and/or the AccessAbility Services Office. All the enquiries will be kept confidential and we will work together to make sure that you can achieve your learning goals in this course. The UTSC AccessAbility Services staff (located in S302) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations (416) 287-7560 or [ability@utsc.utoronto.ca](mailto:ability@utsc.utoronto.ca).

## Academic Integrity:

Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, the University treats cases of cheating and plagiarism very seriously. The University of Toronto's *Code of Behaviour on Academic Matters*: (<http://www.governingcouncil.utoronto.ca/policies/behaveac.htm>) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences.

Potential offences include, but are not limited to: **On tests and exams:** Using or possessing unauthorized aids. Looking at someone else's answers during an exam or test. Misrepresenting your identity. **In academic work:** Falsifying institutional documents or grades. Falsifying or altering any documentation required by the University, including (but not limited to) doctor's notes. All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. There are other offences covered under the Code, but these are the most common. *Please respect these rules and the values that they protect.*

## Tentative Lecture Schedule

The following material will be discussed in the lectures and is listed as topic numbers. Some topics will be covered over more than one or two lectures. Due to the nature of the course, the concepts from different topics will overlap and may contain information from chapters not indicated below e.g. during the course of the lectures we will cover a number of techniques discussed in chapter 18

|         |   |
|---------|---|
| Topic 1 | The genome: chromosomes, genes, DNA, stability, heredity, transposable elements ( <b>Chapter 10</b> )   |
| Topic 2 | Transcription (RNA synthesis) prokaryotic versus Eukaryotic; RNA polymerases; rRNA processing ( <b>Chapter 11</b> )                               |
| Topic 3 | RNA processing in eukaryotes; capping, polyA tail, introns (RNA splicing), ribozymes ( <b>Chapter 11</b> )  |
| Topic 4 | Translation (protein synthesis); Gene expression: post-translational modification; Prokaryotic versus Eukaryotic ( <b>Chapter 11</b> )            |
| Topic 5 | Control of Gene expression: Prokaryotic (inducible/repressible) and eukaryotic (transcription factors), role of the nucleus ( <b>Chapter 12</b> ) |
| Topic 6 | DNA replication and DNA repair ( <b>Chapter 13</b> )  |
| Topic 7 | Cell cycle: role of cyclins, role of microtubules ( <b>Chapter 14</b> )   |
| Topic 8 | Cancer; tumor suppressors, proto-oncogenes ( <b>Chapter 16</b> )  |
| Topic 9 | Signal transduction: kinases, G-proteins, surface receptors ( <b>Chapter 15</b> )   |

**\*\* If I talk about it in class it is testable material \*\***