



**BIOB10H3 Cell Biology**  
**Fall Term Syllabus, 2014**  
Dr. Monica Sauer

*This course is designed to introduce theory and modern experimental techniques in cell biology. Emphasis will be on eukaryotic cells. Structure and function of major animal and plant organelles will be covered. Subsequent topics include the role of the cytoskeleton. Plasma membrane and extracellular matrix will also be detailed in the context of cellular interactions with the environment.*

**Prerequisites:** BIOA01H & BIOA02H & CHMA10H & CHMA11H

**Exclusions:** BIO240H, BIO241H, (BIO250Y)

**Instructor:** Monica Sauer: monica.sauer@utoronto.ca

Office hours: Tuesdays **2-4pm**, or by appointment

Office location: SW 563B

**Lectures:** AC 223, Tuesdays 4-6 p.m.

**Tutorials:** Room - AC 223, Dates: **Thursday Sept. 11, Oct. 2, Oct. 23 & Nov. 13 (5-7 p.m.)**

**Blackboard Resources:**

On campus portal

- outline of PowerPoint presentations will be uploaded onto the BIOB10 blackboard page
- will be available approx. 3 days before lecture
- will not contain all contents of lectures (only major points)
- students should print and bring outlines to class to take notes on additional details.

**Textbook:** “*Cell and Molecular Biology: Concepts and Experiments.*” 7<sup>th</sup> edition\*. Gerald Karp.

\*Used 6<sup>th</sup> editions are also acceptable but some figures have changed so students must check “6<sup>th</sup> Edition Textbook Figure # Changes” document on page 5 of this syllabus.

**Exams\*:** 2 Exams: Midterm worth 40%

-40 multiple choice questions + short answer questions- 2 hours

Final exam worth 60%

-75 multiple choice questions- 3 hours

A short sample exam will be given 2 weeks prior to each exam. Answers to the sample exams will be given 1 week prior to exam so you can check your answers.

Please note there is **NO** web option for this course. Lecture attendance is essential for success in this course.

## **Teaching Assistants:**

### **Course email policy:**

- Your email message must include in the Subject line the course identifier and a concise and clear statement of purpose [e.g., BIOB10: appointment outside of office hours]; the body should contain your full name; otherwise it is likely to be deleted, along with spam messages and messages potentially containing viruses. **Please only use your UTSC email address.**
- We will respond to legitimate email inquiries by email within 48 hours (in most instances) during the workweek (does NOT apply to weekends).
- Email should NOT be used as an alternative to office hours or as a mechanism to receive private tutorials.
- Specific questions regarding prerequisites/ administration should be addressed to the course coordinator: [Kelly Barnes](mailto:kbarnes@utsc.utoronto.ca) (see below). [kbarnes@utsc.utoronto.ca](mailto:kbarnes@utsc.utoronto.ca)

**Facilitated Study Groups:** BIOB10 is supported by Facilitated Study Groups. These weekly study sessions are open to everyone in the class. Attendance is voluntary, but students who attend regularly tend to earn higher grades. Please be sure to fill out the survey at the beginning of the term to help ensure the study groups are scheduled at the most convenient times. If you have any questions, please ask your facilitator, Amrita Annamunthodo (Paris) ([amrita.annamunthodo@mail.utoronto.ca](mailto:amrita.annamunthodo@mail.utoronto.ca)), or visit the FSG website at <http://ctl.utsc.utoronto.ca/home/fsg>.

**Course Administration questions:** Questions regarding course organization, exam planning, exam viewing and issues pertaining to special accommodation (AccessAbility, missed exams, illness, religious accommodation, legal issues etc.) are to be directed to the Course Coordinator, [Kelly Barnes](mailto:kelly.barnes@utoronto.ca)). These issues are NOT dealt with by the professor or TA's.

**Course Coordinator's Kelly Barnes office hours:** MWF (10-12) and Tu/Th (2-4) (or by appointment) in SW421-D. Please consider attending Kelly's office hours for complex questions.

### **\*Missed Exams**

**There will be a single make-up for the midterm.** Students who will be unable to attend the midterm for religious reasons must notify the Course Coordinator as soon as possible after the date is announced. Students who are unable to attend the midterm due to illness must notify Kelly Barnes (by telephone or email) within 3 working days of the test and arrange to present her with a completed UTSC medical certificate (available via the registrar's website) which confirms their illness, and medical attention, at the time of the exam. Medical certificates will be verified. The date of the make-up exam will be announced on blackboard and it is the **SOLE RESPONSIBILITY** of the affected student to ensure they know the date of the make-up exam. Students who miss a midterm with no acceptable, documented excuse will receive zero for that midterm.

**\*\*Students who miss the final must petition the Registrar to write a deferred exam.\*\***

### **Accessibility Needs:**

Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach me and/or the AccessAbility Services Office as soon as possible. I will work with you and AccessAbility Services to ensure you can achieve your learning goals in this course. Enquiries are confidential. 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:**

Please consult: <http://www.utoronto.ca/academicintegrity/resourcesforstudents.html>.

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.

**eg. On tests and exams:** Using or possessing unauthorized aids. Looking at someone else's answers during an exam or test. Misrepresenting your identity.

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\*\*Please refer to this if you have any questions on what course material to study

**STUDYING TIPS:** What to study for exams:

Material that will be covered **ON** the exams:

## 1) Written Text:

- all text from handouts
- additional text shown in class (in blue)
- additional material mentioned in class that I say to write down
- assigned figure legends listed in syllabus (see the next page)

## 2) Figures:

- all assigned figures listed in syllabus
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What is **NOT ON** the exams:

## 1) Text:

- text from the textbook not covered in class/handouts

## 2) Figures:

- figures shown in class/handouts that were not assigned in the syllabus
- details in assigned figures that I stated in class you did not have to learn

## BIOB10 Lecture Content & Assigned Figures

DATE	TOPIC	CHAPTER	RELEVANT FIGURES*
Sept 2	Course Introduction	---	---
Sept 2	Prokaryotes & Eukaryotes	<b>1</b>	Fig. 1, 2, 8, 10, 17, EPFig.1
Sept 9	Biological Macromolecules	<b>2</b>	Fig. 3,4,5, 7, 10, 11, 17, 21, 22, 46, 55, 56, Ch <b>3</b> -Fig. 5
Sept 9	Protein Functions & Sorting	<b>2</b>	Fig. 24, 35
Sept 16	Studying Cells	<b>18</b>	Fig. 1, 6, 7, 9, 11, 12, , 19, Ch. <b>1</b> -HP Fig. 2
Sept 16			
Sept 23	Cytoplasmic Membrane Systems: ER & Golgi	<b>8</b>	Fig. 2, 3, 9, 12, 13, 20, 23, 24, 28, Ch. <b>11</b> - Fig. 2, Ch <b>4</b> .- Fig.11, 19
Sept 23	Trafficking to Lysosomes & Plasma Membrane	<b>8</b>	Fig. 6, 11, 14, 29b, 31, 33
Sept 30	Plasma Membrane: structure	<b>4</b>	Fig. 4, 5, 12, 13, 24, 51, Ch. <b>18</b> - Fig.16&17
Sept 30	Plasma Membrane: transport	<b>4</b>	Fig. 27, 28, 33, 44, 46a
Oct 7	Endocytosis/Phagocytosis	<b>8</b>	Fig. 37, 38, 43 46
Oct 13-18	READING WEEK		
EXAM	Date and Time TBA	---	----
Oct 21	Mitochondria I	<b>5</b>	Fig. 1, 3, 4, 5(aerobic only)
Oct 21	Mitochondria II	<b>5</b>	Fig. 10, 21, 30, Ch <b>8</b> -Fig.47
Oct 28	Chloroplasts	<b>6</b>	2, 3, 4, 5,16,20,Ch. <b>8</b> -Fig.48
Oct 28	Other Organelles	<b>8, 12</b>	Ch. <b>8</b> - Fig.10,36, Ch. <b>12</b> - Fig. 5, 6, 7, 9
Nov 4	Studying Proteins	<b>18</b>	Fig. 24, 25, 26, 28, 30, 31, Ch <b>2</b> -Fig.47-50,Ch <b>11</b> -Fig36
Nov 4	Cytosolic Proteins/Scientists	---	---
Nov 11	Cytoskeleton: Microtubules I	<b>9</b>	Fig. 1, 2, 6, 7, 8c, 9,10, 11, 13, 15c, 16, 17, Table 1
Nov 11	Cytoskeleton: Microtubules II	<b>9</b>	Fig. 18, 19, 29
Nov 18	Cytoskeleton: Actin/ Intermediate Filaments	<b>9</b>	Fig. 42, 43, 44, 46b, 49, 50, 51, 53, 57, 66, 68-72, 74
Nov 18	Extracellular Matrix (ECM) I	<b>7</b>	Fig. 1, 4, 5, 6, 14, 15, 17,18
Nov 25	Extracellular Matrix (ECM) II	<b>7</b>	19a, 23, 25, 27a, 28, 30, 32, 33, HP fig 1
Nov 25	Cell Specializations	---	---
FINAL EXAM	Date and Time TBA		

**\*Disclaimer:** The figures correspond to the 7<sup>th</sup> edition. Check the following page for figure changes in the 6<sup>th</sup> edition. The above schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances.

## BIOB10H3 Cell Biology: Textbook Edition Changes

**Textbook: “Cell and Molecular Biology: Concepts and Experiments.” 7<sup>th</sup> edition. Gerald Karp**

- Figure numbers shown in the 7<sup>th</sup> Ed textbook; correspond to the following 6<sup>th</sup> edition figures below.

Example:    Lecture 2:            7<sup>th</sup> Edition text Fig 2.55 → 6<sup>th</sup> Edition textbook Fig 2.53

Lecture number	7 <sup>th</sup> edition text figures	6 <sup>th</sup> edition text figures
Lecture 2: Macromolecules	Fig. 2.55	Fig. 2.53
	Fig. 2.56	Fig. 2.54
Lecture 5 : Plasma Membrane	Fig.4.46a	Fig. 4.46
	Fig. 4.51a	Fig. 4.50a
Lecture 6: Endocytosis	Fig. 8.43	Fig. 8.42
	Fig. 8.46	Fig. 8.45b
Lecture 7:Mitochondria	Fig. 5.21	Fig. 5.20
Lecture 8: Other organelles	Fig. 12.5	Fig. 12.1
	Fig. 12.6	Fig. 12.2
	Fig. 12.7	Fig. 12.3
	Fig. 12.9	Fig. 12.5
Lecture 9: Studying proteins	Fig. 11.36	Fig. 11.37
Lecture 11:Intermed.filaments	Fig. 9.42	Fig. 9.41
	Fig. 9.43	Fig. 9.42
	Fig. 9.44	Fig. 9.43
	Fig. 9.47	Fig. 9.46