

# MCB215 - Foundation in Molecular and Cell Biology

## Tentative Summer 2019

### Instructor:

Dr. Lyne Lévesque  
University of Illinois at Urbana-Champaign

### Contact Information

**Office Phone:** +1 (217) 333-7565

**E-mail:** levesque@illinois.edu

**Virtual Office Hours:** See the Instructor's Virtual Office page for details. If you feel that a one-to-one meeting is needed for your issue, e-mail Dr. Lévesque to arrange for a specific time to meet.

### Course Description

MCB215 (Foundation in Molecular and Cell Biology) provides transfer students with the essential bases in Molecular and Cellular Biology needed to succeed in the MCB core curriculum, when entering it at the sophomore level (MCB250/252). In this course, transfer students will be exposed to the major concepts and the experimental aspects of MCB. The online format and the grouping of lectures in weekly themes will give students an integrated view of a cell and its inner working.

### Course Objectives

Upon completing this course, students should

- be well-acquainted with the major concepts of MCB
- be introduced to the concept of experimental biology
- be prepared for entering the sophomore level courses MCB 250/252

### Course Structure

This is a 3 credit hour course. The course covers 8 content modules over 8 weeks. **Please note that this is an accelerated course;** content equivalent to approx. 16 weeks of a traditional course will be covered in 8 weeks. You should dedicate approximately 9—12 hours per week to working on the course itself, but actual time commitments will vary depending on your input, needs, and personal study habits. **You will need to log on to the course website a minimum of 4 times per week** to complete activities that contribute to your grade. However, you will probably need to do so more frequently to take full advantage of the course materials.

# MCB215 - Foundation in Molecular and Cell Biology

## Tentative Summer 2019

This course is designed with the principles of collaborative learning, constructivism, and active participation in mind. Since we do not meet face to face 2-3 times per week as we would in a conventional course, a Question and Answer forum on the course website allows you to share your questions, thoughts and engage in problem-solving with your fellow students. Many previous students have found the Q & A forum to be genuinely helpful for their success in the course. It is also a good way of getting to know your fellow students prior to your arrival on campus, so we encourage you to use the forum for these purposes. The course has a consistent and predictable structure, organized around the modules, with a course website that is straightforward and easy to navigate. Instructions and due dates for activities and assignments are clearly articulated, making it easy for you to know what is expected of you and what you need to do to stay on track.

We realize that you have a life beyond the scope of this course. However, if you are unable to complete an assignment because of professional obligations, you should notify the instructor or, better yet, prepare the assignment ahead of time and post it early. This will give your classmates more opportunities to read and respond to your work. Most assignments are due by 11:55 PM (CDT) on the respective due dates listed on the Overview page for each of the weekly modules. These due dates have been selected to give you and your classmates time to read and comment on each other's work before the next module begins.

Assigned readings and responses to discussion questions should be read and submitted during the module for which they are assigned in order to get the most benefit from the discussions. At the end of each content module, participants will have an opportunity to make sure that they have completed all the required activities and assignments.

### Textbooks and Required Resources

The readings assigned for this course are drawn from "Life – The Science of Biology" (Eleventh Edition). This fairly comprehensive text is somewhat expensive to purchase new, either as single (weighty) bound book or a set of looseleaf sheets. Our course utilizes only selected portions of the text and purchasing access to the e-book on the publishers website is a much more economical option. Thus, access to the e-book is a requirement for this course. Access to the e-book can be purchased for periods of 180 days, 1 year or 2 years, and provides you with the complete text plus a wealth of supplementary figures, videos and other information that you are likely to find interesting and useful. Although different texts are used in MCB 250 and higher level courses, you are likely to find this e-book to be helpful in later courses, and should consider buying access for 1 or 2 years rather than just 180 days.

(Optional) If you do wish to purchase a hardcopy of the textbook "Life – The Science of Biology" (Eleventh Edition) published in 2016 by Sinauer Associates, new and used copies are available from the Illini Union Bookstore, Amazon.com, or the vendor of your choice. New copies can be purchased with or without a code that provides 2 years of e-book access. Used copies are typically heavily discounted but note that if an access code is included, they may no longer be valid.

# MCB215 - Foundation in Molecular and Cell Biology

## Tentative Summer 2019

### Logging into the Launchpad for the First Time

Go to <http://www.macmillanhighered.com/launchpad/life10e/5692437> to purchase access to the ebook. This page also serves as your subsequent logon point for accessing the e-book and associated material after you have purchased access. Bookmark it in your browser to facilitate future visits.

#### Articles and e-Reserves

This course does not require accessing the e-Reserves.

#### Course Outline

- Orientation Module
- Module 1: Biological membranes. Emphasis on their properties and why they are critical for cell activities.
- Module 2: How an exogenous signal is received and transmitted to the cell nucleus.
- Module 3: Organization of nuclear functions. Emphasis on chromatin organization and DNA replication (both Prokaryotes and Eukaryotes).
- Module 4: Organization of nuclear functions. Emphasis on transcriptional control of gene expression (both Prokaryotes and Eukaryotes), nuclear envelope and RNA export.
- Module 5: Protein translation and transport. Emphasis on translation regulation, ER, Golgi, and vesicular trafficking.
- Module 6: Cytoskeleton. Emphasis on F actin, microtubules, and cellular movements.
- Module 7: Metabolism, enzymes, and ATP formation.
- Module 8: Events of mitosis/meiosis, cell cycle regulation, and cancer.

# MCB215 - Foundation in Molecular and Cell Biology

## Tentative Summer 2019

### Course Activities

### Grading Scale

Grade	Percentage	Points	Grade Point Value
A+	92.0–100.0	460–500	4.000
A	88.3–91.9	442–459	4.000
A-	85.0–88.2	425–441	3.667
B+	81.7–84.9	409–424	3.333
B	78.3–81.6	392–408	3.000
B-	75.0–78.2	375–391	2.667
C+	71.7–74.9	359–374	2.333
C	68.3–71.6	342–358	2.000
C-	65.0–68.2	325–341	1.667
D+	61.7–64.9	309–324	1.333
D	58.3–61.6	292–308	1.000
D-	55.0–58.2	275–291	0.667
F	0–54.9	0–274	0.000

View the Graduate College Handbook for Students, Faculty and Staff Chapter III: Academic Record [Grading System](#) page for more information.

### Assignments, Weights, and Deliverables

You can access your scores by clicking the **Grades** link from the left column of the course homepage.

All interim and final deliverables have due dates. Failure to meet deadlines results in a reduction of the assignment points. For the due dates of each assignment, please see the weekly Overview pages.

# MCB215 - Foundation in Molecular and Cell Biology

## Tentative Summer 2019

	Week 1	Week 2	Week 3	Week 4 ( <a href="#">exam 1</a> )	Week 5	Week 6	Week 7	Week 8 ( <a href="#">exam 2</a> )	Total points per assignment
Readings Quiz	6	6	6	6	6	6	6	6	48
Lecture Quiz	4	4	4	4	4	4	4	4	32
Homework	10	10	10	10	10	10	10	10	80
<a href="#">Synchronous Discussion</a>	5	5	5	5	5	5	5	5	40
Exams				150				150	300
Total	25	25	25	175	25	25	25	175	500

### Module Overview

Each module begins with an overview which clearly explains the content of the module, provides an introduction to the content, reading assignments and other Web resources, key phrases to watch for, guiding questions to help frame your study of the material, and outlines associated due dates.

### Reading Assignment

Selected pages of the e-book are assigned to be read for each week of the course. These e-book assignments are interactive and include links to related figures, animations, and videos. Many sections end with “Learning Curve” questions provided by the publisher that you can use to test your understanding of the material. Please note that your instructor does not monitor the quizzes performed on the e-book website. They are not used to determine grades in this course, but feel free to use them as a learning aid.

### Readings Quiz

A brief multiple-choice/true-false quiz on the MCB 215 course website that tests your understanding of the assigned readings must be completed prior to the due date stated for each week. Multiple attempts are allowed for each reading quiz, and the highest grade obtained each week is used in calculating your final grade. Strive to complete the readings well in advance of the quiz deadlines so you can revisit the readings or post questions in the Q&A forums and get feedback from your fellow students if you find any material problematic.

# MCB215 - Foundation in Molecular and Cell Biology

## Tentative Summer 2019

### Interactive Lecture

Each module includes an interactive lecture. These include slides with narrations by Dr. Michel Bellini, as well as questions throughout the lecture. Additionally, links to multimedia resources relevant to each lecture are listed in the Overview page for many modules. Some people may find it helpful to view the lecture before completing the readings in order to see the big picture first, while others may prefer to complete the readings followed by the lecture to see how it all comes together. Feel free to experiment and use whatever strategy works best for you.

### Lecture Quiz

A second brief multiple-choice/true-false quiz on the course website tests your understanding of the lecture material. This must be completed after viewing each lecture and before the respective weekly due date. Multiple attempts are allowed for each lecture quiz and the highest grade obtained each week is used in calculating your final grade. You should view each lecture well in advance of the quiz deadline so you can review segments of the lectures and post questions in the Q&A forum to get feedback from other students if you are confused by any of the material.

### Homework

The homework assignments are online problem solving quizzes that give you a chance to apply some of what you have learned. Homework assignments are submitted only once per week, and this must be completed prior to the stated deadline to be considered for your grading. However, you can access and revise the answers you saved previously on the course website multiple times prior to submitting it by the respective deadline. Please save your work in progress regularly while on the homework pages, and particularly before you leave the page to seek additional information. This ensures that none of your work will be lost inadvertently, and allow you to return and revise it prior to submitting it for grading. If possible, we recommend that you use a word processing program on your personal computer to compose initial and revised answers, and then copy and paste these answers into the text boxes of the course website's homework pages.

### Exam Information

A "mid-term" exam ([Exam 1](#)) will be administered during week 4 and a final exam ([Exam 2](#)) will be administered immediately after week 8. Each of these exams will account for 25 % of your final grade. [Exam 1](#) covers modules 1-3 and [Exam 2](#) covers modules 4-8. The exams will cover all assigned course material (readings, lectures, rationale behind correct answers for quizz and homework questions). The exams are administered via the course website, and you must submit you answers within 2 hours of initiating your attempt. You are responsible for completing the exams within the time limit, regardless of technical failure. You can take these exams on the UIUC campus or off campus with online proctoring . Makeup exams are possible only in cases of extreme hardship or with documentation of a university excuse.

# MCB215 - Foundation in Molecular and Cell Biology

## Tentative Summer 2019

### Exam Options

#### Option 1: On Campus

You can take either or both of the exams in Burrill Hall room 101 (computers provided) on the Urbana-Champaign campus. [Exam 1](#) is tentatively scheduled for 9-11 am on Wednesday, July 3, 2019. [Exam 2](#) is tentatively scheduled for 9-11 am on Friday, August 9, 2019.

#### Option 2: Off Campus with online proctoring

ProctorU is an online proctoring service that allows students to take exams online at home or other off campus sites while ensuring the integrity of the exam for the institution. The service authenticates your identity and monitors your computer screen and webcam to ensure academic integrity. A fee (\$21.50 for a 2-hour exam) is billed when you schedule a time to take an exam. If you need to change your scheduled time, you must do it prior to the scheduled time to receive a refund. Appointments should be made at least 3 days in advance, since reservations made within 72 hours of your exam are subject to a late reservation fee.

- Web cam, microphone, and computer with internet connection are required.
- [ProctorU System Requirements and System Test](#)
- [How to Schedule Your Exam with ProctorU](#)

**Some Advice About Sources of Information:** It is highly recommended that you consult only the sources of information listed below when studying for this class. Searching the internet can find genuine information provided by reliable sources. However, unreliable information provided by dubious sources masquerading to appear to be reliable is also abundant.

- Class textbook and required readings
- Supplemental information posted on course website
- Internet links provided in class or on course website

### Technical Support

If you need help:

- E-mail the instructor directly only about personal matters.
- For all other questions (e.g. course content, activities, deadlines, technical problems), first check the Q & A forum on the course website to see if someone else has already asked the same question and received responses.
- If your question isn't there yet, please post it to the Q & A forum to give your fellow students a chance to consider the issue and post their suggested answer for the benefit of the entire class!

# MCB215 - Foundation in Molecular and Cell Biology

## Tentative Summer 2019

- The Instructor monitors the forum and can award discretionary points to students posting thoughtful questions and answers on course content. He will also provide or clarify answers when necessary
- If you have technical problems with the course website, please fill out [this form](#).
- For problems with the Launchpad site, access follow the links on their [Customer Support](#) pages or phone (800) 936-6899 to speak with a representative.