



BIO 231

Cell and Molecular Biology

Semester: Winter, 2016
 Days: Mondays and Tuesdays,
 Room: 4:00-5:15 PM
 Tutorial – A2141
 day: Tuesdays, 5:30 – 6:30 PM
 Lab–Room: A2212

Number of credits: 3

Prerequisite:
 BIO 131 and BIO 133

Instructor: Zenobia Ali, PhD
 Email: Zenobia.Ali@ambrose.edu
 Phone:
 Office: By appointment
 Office hours:

Course Description:

This course examines the principles of cellular structure and function, as well as the interaction of cells with their environment.

Further Course Information:

A cell is the smallest unit of life. It is highly complex and organized so that cellular activities are precise and efficient. This course introduces students to the basic cell structures and their functions. Cellular processes including energy production, gene expression, reproduction and communication will be discussed.

Expected Learning Outcomes:

It is the aim of the course that students acquire the following skills:

1. Students will be able to identify basic cellular structures and explain their functions.
2. Students will be able to describe details of essential cellular activities.
3. Students will be able to corroborate etiology of some diseases to aberrant cellular component.

Important Dates:

First day of classes: January 6, 2016
 Last day to add/drop/change to audit: January 17, 2016
 Last day to request revised examination: February 29, 2016
 Last day to withdraw from course: March 18, 2016
 Last day to apply for time extension for coursework: March 28, 2016
 Last day of classes: April 13, 2016

Final Exam: Friday April 15 2016
Time: 9:00 AM- 12:00
Room: A2210

Outline:

Date	Topic	Chapter
Jan 11	Introduction to the course.	1
Jan 12	Metabolism overview - Chemistry and biomolecules	2
Jan 18	Metabolism overview – Biochemical pathways	3
Jan 19	Aerobic respiration and the mitochondrion	5
Jan 19	Tutorial 1: A touch of biochemistry	
Jan 25	Photosynthesis and the chloroplast	6
Jan 26	Plasma membrane: the components	4.1 – 4.6
Jan 26	Tutorial 2: The electron transport chain.	
Feb 1	Test 1 (Ch 1, 2, 3, 5 and 6) Tutorials 1 and 2 due.	
Feb 2	Plasma membrane: structure and function	4.7 – 4.8
Feb 2	Tutorial 3: Plasma membrane.	
Feb 8	Cytoplasmic membrane systems	8
Feb 9	The cytoskeleton and cell motility	9
Feb 9	Tutorial 4: Cytoplasmic membrane and the cytoskeleton	
Feb 15	Family Day (No classes).	
Feb 16-21	Mid-semester break	
Feb 22	Genes and the genome	10
Feb 23	Gene expression	11
Feb 23	Control of gene expression	12
Feb 29	DNA replication and repair	13

Mar 1	Cellular reproduction: Cell Cycle	14
Mar 1	Tutorial 5: Gene expression	
Mar 7	Test 2 (Ch 4, 8, 9, 10, 11 and 12) Tutorials 3, 4 and 5 due.	
Mar 8	Cellular reproduction: Mitosis and Meiosis	14
Mar 8	Tutorial 6: DNA and cellular reproduction	
Mar 14	Interactions between cells and their environment	7
Mar 15	Communication between cells I	15.1 – 15.3
Mar 15	Review so far	
Mar 21	Communication between cells II	15.4-15.8
Mar 22	Cancer	16
Mar 22	Tutorial 7: Interactions and communications	
Mar 28	Easter Monday (no class)	
Mar 29	The immune response I	17.1 – 17.3
Mar 29	The immune response II	17.4
Apr 4	Tutorial 8: Cancer and the immune response	
Apr 5	Test 3 (Ch 7, 13, 14, 15, 16 and 17) Tutorials 6, 7 and 8 due.	
Apr 11	Course review	
Apr 15	Final Exam. 9:00 am at A2210.	

Requirements:

Students are encouraged to read the corresponding chapter prior to attending lectures. There will be no specific lecture notes, nor review study guide provided. Students are encouraged to generate their own notes according to their learning styles. All lecture PowerPoints and tutorial assignments will be posted in Moodle. Tutorials are designed to review the lecture topics and key concepts in preparation for tests. Therefore, tutorial assignment submission deadlines are on the day of tests.

Submission of Assignments:

Electronic submissions (via email) of all assignments are preferred, including any hand-drawn figures (scanned and inserted into assignment document file). Due dates for each assignment is specified in the assignment sheet and in Moodle. Late submissions are not accepted unless sufficient reason is provided as a written request for extension to the

instructor prior to the due date. Note that any request for extension is not automatically granted. Each request is assessed individually and the length of extension, if any, may vary. The instructor's decision on the extension is final.

Attendance:

There are no penalties for non-attendance of lectures or tutorials, except for tests and exams

Evaluation:

Tests (3 × 15%)	45%
Tutorial assignments (8 × 2%)	16%
Final exam	39%

Tests will consist of short answer questions based on topics covered during lectures. The tests are not cumulative. Each test carries 15% of the total course marks.

There are 8 tutorial assignments; each carrying 2% of the total course marks. This is a completion mark, therefore incomplete questions are penalized between 0.25 – 2% each. Please note submission deadlines for each tutorial assignment in Moodle.

The final exam will consist of multiple-choice questions, short and long answer questions. Questions will be based on topics covered in lectures and corresponding chapters from the required textbook. The final exam will cover topics from the whole course (cumulative).

Grade Summary:

Grading scheme for this course:

A+	93.0 – 100%	C+	66.0 – 69.9%
A	86.0 – 92.9%	C	62.0 – 65.9%
A-	82.0 – 85.9%	C-	58.0 – 61.9%
B+	78.0 – 81.9%	D+	54.0 – 57.9%
B	74.0 – 77.9%	D	50.0 – 53.9%
B-	70.0 – 73.9%	F	Below 49.9%

The available letters for course grades are as follows:

<u>Letter Grade</u>	<u>Description</u>
A+	Excellent
A	
A-	
B+	Good
B	
B-	
C+	Satisfactory
C	
C-	
D+	Minimal Pass
D	
F	Failure

Because of the nature of the Alpha 4.00 system, there can be no uniform College-wide conversion scale. The relationship between raw scores (e.g. percentages) and the resultant letter grade will depend on the nature of the course and the instructor's assessment of the level of each class, compared to similar classes taught previously.

Please note that final grades will be available on student registration system. Printed grade sheets are no longer mailed out.

Textbooks:

Gerald Karp. Cell and Molecular Biology: Concepts and Experiments. 7th Edition. John Wiley & Sons, Inc. ISBN-

13: 978-1118206737.

Older editions of this textbook are acceptable. However, please take note of any updates and all references to the textbook in lectures and tutorials, such as figures and concepts, are based on the 7th edition.

Policies:

All students have received an Ambrose e-mail account upon registration. It is the student's responsibility to check this account regularly as the Ambrose email system will be the professor's instrument for notifying students of important matters (Cancelled class sessions, extensions, requested appointments, etc.) between class sessions. If students do not wish to use their Ambrose accounts, it is highly recommended that they forward all messages from the Ambrose account to the other account.

During the **Registration Revision Period** students may to enter a course without permission, change the designation of any class from credit to audit and /or voluntary withdraw from a course without financial or academic penalty. These courses will not appear on the student's transcript. Courses should be added or dropped on the student portal by the deadline date, please consult the List of Important Dates. After that date, the original status remains and the student is responsible for related fees.

Students intending to withdraw from a course after the Registration Revision Period must apply to the Office of the Registrar by submitting a Request to Withdraw from a Course by the **Withdrawal Deadline**, please consult the List of Important Dates. Withdrawal from courses after the Registration Revision period will not be eligible for tuition refund. A grade of "W" will appear on the student's transcript.

Students wishing to withdraw from a course, but who fail to do so by the applicable date, will receive the grade earned in accordance with the course syllabus. A student obliged to withdraw from a course after the Withdrawal Deadline because of health or other reasons may apply to the Registrar for special consideration.

Students, who find a conflict in their exam schedule must submit a **Revised Examination** Request form to the Registrar's Office by the deadline date, please consult the List of Important Dates. Requests will be considered for the following reasons only: 1) the scheduled final examination slot conflicts with another exam; 2) three final exams within three consecutive exam time blocks; 3) the scheduled final exam slot conflicts with an exam at another institution; 4) extenuating circumstances. Travel is not considered a valid excuse for re-scheduling or missing a final exam.

Electronic Etiquette

Students are expected to treat their instructor, guest speakers, and fellow students with respect. It is disruptive to the learning goals of a course or seminar and disrespectful to fellow students and the instructor to engage in electronically-enabled activities unrelated to the class during a class session. Please turn off all cell phones and other electronic devices during class. Laptops should be used for class-related purposes only. Please do not use iPods, MP3 players, or headphones. Do not text, read, or send personal emails, go on Facebook or other social networks, search the internet, or play computer games during class. The professor has the right to disallow the student to use a laptop in future lectures and/or to ask a student to withdraw from the session if s/he does not comply with this policy. Repeat offenders will be directed to the Dean. If you are expecting communication due to an emergency, please speak with the professor before the class begins.

Academic Policies

It is the responsibility of all students to become familiar with and adhere to academic policies as stated in the Academic Calendar. Personal information, that is information about an individual that may be used to identify that individual, may be collected as a requirement as part of taking this class. Any information collected will only be used and disclosed for the purpose for which the collection was intended. For further information contact the Privacy Compliance Officer at privacy@ambrose.edu.

Extensions

Although extensions to coursework in the semester are at the discretion of the instructor, students may not turn in coursework for evaluation after the last day of the scheduled final examination period unless they have received permission for a "**Course Extension**" from the Registrar's Office. Requests for course extensions or alternative examination time must be submitted to the Registrar's Office by the deadline date, please consult the List of Important Dates. Course extensions are only granted for serious issues that arise "due to circumstances beyond the student's control".

Appeal of Grade

An appeal for change of grade on any course work must be made to the course instructor within one week of receiving notification of the grade. An appeal for change of final grade must be submitted to the Office of the Registrar in writing within 30 days of receiving notification of the final grade, providing the basis for appeal. A review fee of \$50.00 must accompany the appeal to review final grades. If the appeal is sustained, the fee will be refunded.

Academic Integrity

We are committed to fostering personal integrity and will not overlook breaches of integrity such as plagiarism and cheating. Academic dishonesty is taken seriously at Ambrose University as it undermines our academic standards and affects the integrity of each member of our learning community. Any attempt to obtain credit for academic work through fraudulent, deceptive, or dishonest means is academic dishonesty. Plagiarism involves presenting someone else's ideas, words, or work as one's own. Plagiarism is fraud and theft, but plagiarism can also occur by accident when a student fails or forgets to give credit to another person's ideas or words. Plagiarism and cheating can result in a failing grade for an assignment, for the course, or immediate dismissal from the university. Students are expected to be familiar with the policies in the current Academic Calendar that deal with plagiarism, cheating, and the penalties and procedures for dealing with these matters. All cases of academic dishonesty are reported to the Academic Dean and become part of the student's permanent record.

Students are strongly advised to retain this syllabus for their records.

Other

Any added features in the syllabus are optional. You may or may not wish to include elements such as a bibliography, reading list, schedule of lectures/topics, or reporting form.