

BIO 110 SECTION 72- INTRODUCTORY BIOLOGY – WINTER, 2016

Course Description:

Students will investigate the nature of science and critically analyze scientific data and current biological issues. Basic biological concepts including cell structure and function, molecular biology, biotechnology, nutrient cycles, and evolution are presented in the context of current issues. This course is designed for non-science majors, and includes a laboratory component. Prerequisites: ENG 085, 090, and MAT 031 or higher

The main focus of this course is improving scientific literacy. The course material provides the biological foundation of concepts and terms to understand current topics. Although this is an introductory course, “introductory” doesn’t mean “easy”, but that the course does not require background knowledge in biology. Students will need to spend significant time studying to succeed – JCC’s recommendation is 2 hours per week per credit hour = 8 hours a week for this course. Students successfully completing the course should develop lifelong skills to critically evaluate scientific information.

Course Objectives:

Students successfully completing this course should be able to:

- Describe the nature of science as a self correcting process.
- Identify cell structures and describe their functions.
- Explain the origin of cancer cells and factors affecting their growth.
- Understand the basic structure and function of DNA.
- Describe basic biotechnology procedures and applications
- Understand the mechanisms of evolutionary change and how evolution differs from non-scientific explanations.
- Understand the factors affecting global warming and other human impacts on the environment

Instructor: Prof. Lindsay Cain
Email: cainlindsayr@jccmi.edu
Class Time: Lecture – M/W 9:30-10:53
Lab – M 11:00-12:50

Required Materials:

Text: Biology Science For Life With Physiology, Belk and Maier
ISBN 1-323-19264-6

Lab Packet: available at the bookstore

Calculator: cell phones or other electronic devices may not be used during any exams or lab quiz, and a calculator will often be needed during lab

Associate Degree Outcomes:

The Board of Trustees has determined that all JCC graduates should develop or enhance certain essential skills while enrolled in the college. The Associate Degree Outcomes addressed in this class are:

ADO 4: Scientific Reasoning. Students will be able to design and carry out valid experiments to assess a given hypothesis, and to draw appropriate conclusions based on the results.

ADO 7: Critical Thinking. Students will learn to critically analyze and interpret scientific data from scientific experiments, as in the analysis carried out in numerous labs that involve interpreting and graphing data.

Incompletes - Consistent with JCC policy, Incompletes are granted with instructor permission only in situations where a student is passing the course and encounters an unusual emergency that prevents them from completing very limited coursework.

Instructor Absence/School Closing: If I am unable to attend class, the building secretary will be notified, and a notice will be posted outside our room. If the college is closed due to inclement weather, announcements are made on local radio stations. With the exception of these two situations, **ASSUME WE WILL HAVE CLASS.**

Plagiarism and Cheating - Be sure that homework and any assignments are your own work. Copying anyone else's work is **plagiarism**, and plagiarized work will **not be accepted.** Evidence of plagiarism or cheating on any exam, lab, lab quiz or assignment will result in a "0" score for that assignment and notification of the Academic Dean, with no possibility for dropping a quiz or exam. Please see the attached JCC Academic Honesty Policy.

Extra Credit - is not given in the course. Focus your time and energy on completing course assignments and studying for lab quizzes and lecture exams.

Course Help and Special Needs - if you have special needs that I should be aware of in order to help you to best learn course material, please let me know as soon as possible. Students requiring special assistance (including those affected by the Americans With Disabilities Act) should contact the Center for Student Success in Bert Walker Hall, Room 123, 796-8415. Tutoring services are free at JCC - if at any point in the course you feel that you would benefit from a tutor, contact me and/or the CSS.

JetNet Resources – reliable computer access is necessary for this course, as some course materials can be accessed only through the JetNet course management system. I will post announcements and grades, as well as many other course materials through this system. Simply type in the URL <http://classes.jccmi.edu>. or access JetNet through the JC web page by choosing "Online classes".

Grading Scale - Grades will be rounded to the nearest percent. Grades may be curved at the instructor's discretion.

<u>Percent</u>	<u>Grade</u>	<u>Percent</u>	<u>Grade</u>	<u>Percent</u>	<u>Grade</u>
90 - 100%	4.0	75 – 79 %	2.5	60 – 64 %	1.0
85 – 89 %	3.5	70 – 74 %	2.0	55 – 59 %	0.5
80 – 84 %	3.0	65 – 69 %	1.5		

Student Responsibilities:

Attendance - I expect that you will do your best to attend every class. Because testing is primarily from lectures, and discussion papers are only accepted from those completing a discussion in person, missing class will negatively affect your grade.

Keep Up With Assignments - If you miss class, it is your responsibility to track exam, quiz, homework and discussion due dates. In class assignments cannot be made up.

Contribute to a courteous learning environment – Our class time is valuable. Please be punctual, especially on exam days, to avoid disruption to others and to be aware of class announcements. Anyone who interferes with the learning of others will be asked to leave class. This includes talking while I am talking, texting or using cell phones or other devices during class, or being disruptive or disrespectful to others.

Study - This is a difficult course that will take significant study time outside of class. You will need to use the text and electronic resources, review notes and do study questions to prep for exams and lab quizzes.

Grading:

Lecture accounts for 75% of the overall grade, and is described here. To determine your overall course grade at any point, use the following formula:

$$\text{Course \%} = (\text{Lecture \%} \times 3) + (\text{Lab \%}) / 4$$

Exams – There will be five exams in the course, which may include multiple choice, short answer, fill-in, problem solving, and essay. The lowest of the first four exam scores will be automatically dropped if no exams have been missed. The final exam score may not be dropped.

A missed exam for whatever reason (illness, car trouble, bad weather, etc.) will count as the drop exam – there are no makeup exams. Subsequent missed exams will count as a “zero” except at my discretion, in very unusual circumstances that can be documented, like hospitalization or death in the immediate family.

Assignments - will be accepted up to one class day late, but with a 20% point reduction of possible points after the first five minutes of class time the day they are due. All assignments should be typed, and will not be accepted otherwise. In class assignments cannot be made up. Technology failure is not an excuse for late work. Protect your work carefully, including saving often, and backing up work in more than one place.

Academic Honesty Policy

Academic honesty is expected of all students. It is the ethical behavior that includes producing their own work and not representing others' work as their own, either by plagiarism, by cheating, or by helping others to do so.

Plagiarism is the failure to give credit for the use of material from outside sources. Plagiarism includes but is not limited to:

- Using data, quotations, or paraphrases from other sources without adequate documentation
- Submitting others' work as your own
- Exhibiting other behaviors generally considered unethical

Cheating means obtaining answers/material from an outside source without authorization. Cheating includes, but is not limited to:

- Plagiarizing in all forms
- Using notes/books without authorization
- Copying
- Submitting others' work as your own or submitting your work for others
- Altering graded work
- Falsifying data
- Exhibiting other behaviors generally considered unethical

Collaboration

While JCC encourages students to collaborate in study groups, work teams, and with lab partners, each student should take responsibility for accurately representing his/her own contribution.

Consequences/Procedures

A faculty member who suspects a student of academic dishonesty may penalize the student by taking appropriate action up to and including assigning a failing grade for the paper, project, report, exam or the course itself. Instructors should document instances of academic dishonesty in writing to the Dean of Faculty.

Student Appeal Process

In the event of a dispute, both students and faculty should follow the Conflict Resolution Policy. The policy is presented in the Student Rights and Responsibilities section of the student handbook. The first step of this process is to set up a scheduled conference with the instructor to discuss the issues of concern.

Tentative Topics Schedule*: (* Schedule may be altered as necessary)

<u>Approximate Date</u>	<u>Topic</u>	<u>**Chapter Reading</u>
1/18	Introduction	
<u>Nature of Science</u>	1/20 What is Life?	Chapter 1, 2.1
<u>And Statistics</u>	1/25 Nature of Science	Chapter 1
	1/27 How does science work?	Chapter 1
	2/1 Statistical significance	Chapter 1
	2/3 Standard Error and P-Values	JetNet sources
	2/8 Chemistry of Life	Chapter 2.2, 2.3
<u>Chemistry of Life</u>	2/10 Exam 1	
	2/15 Carbohydrates	Chapter 2.4, 3.1
	2/17 Lipids and Your Health	Chapter 2.4, 3.1
	2/22 Proteins	Chapter 2.4, 3.1
	2/24 Exam 2	
	2/29 Spring Break – No Classes	
<u>Organic Molecules</u>	3/7 Nutrients & Nucleic Acids	Chapter 2.4/3.1/4.3 (BMI)
<u>And Cells</u>	3/9 Plasma Membranes, Cell Structure	Chapter 3.2
	3/14 Cancer Basics	Chapter 6.1
	3/16 Exam 3	
<u>Cancer</u>	3/21 Cancer Basics	
	3/23 DNA Structure	Chapter 6.2, 2.4
	3/28 Mutations	Chapter 6.2
	3/30 Cancer Treatment	Chapter 6.4-6.5
	4/4 Biotechnology – DNA Fingerprinting	Chapter 8.4
<u>Biotechnology</u>	4/6 PCR and Mitochondrial DNA	
	4/11 Stem Cells	Chapter
<u>Evolution</u>	4/13 Exam 4	
	4/18 Darwin’s dangerous idea	Chapter 10
	4/20 Evidences For Evolution	Chapter 10
	4/25 Natural Selection	Chapter 11
<u>Human Impact on</u>	4/27 Climate Change	Chapter 5.1-5.5, 12.4
<u>the Environment</u>	5/2 Climate Change	
	5/4 Exam V	

Important Dates***:

1/26/16	First electronic grade entry on E-Services – check these!
1/28/16	Last Day For Refund/Drop With No W
2/15/16	HQV 2 mark entered in E-Services
3/21/16	Midterm grades posted on E-Services
4/29/16	Last Day To Withdraw – consult an advisor first!
5/4/16	Our Last Day of Class

*** may change, accurate as of 1/4/16, always check E-Services

Statement of Receipt of Course Syllabus

I have received a copy of the syllabus for Biology 110 Section 72 and agree to abide by its terms and conditions.

I understand that any questions or concerns I have about the syllabus should be discussed with the instructor.

Student's Name (printed)

Student's Signature

Date