



Introduction to Life Science

BIOL 1000

July 12 – August 13, 2021

3 undergraduate credits

Instructor: Laura Mahan

Office Hours: TBA

OFFICIAL COURSE DESCRIPTION:

This course is an introduction to basic principles common to all facets of biology. Topics include a brief history of biology, the diversity of life, cell structure and reproduction, and metabolism.

COURSE GOALS AND LEARNING OBJECTIVES:

1. Identify the internal and external structures of both the prokaryotic and eukaryotic cells.
2. Recognize energy pathways such as photosynthesis, respiration, and overall cellular metabolism.
3. Knowledge of basics in genetics, molecular/cellular biology.
4. Understanding of principles of evolution and phylogeny.
5. Ability to connect biological knowledge to society issues
6. Appreciation of biological diversity.

TEXTS:

We will also use an online textbook found at OpenStax Biology (open source e-book):

<https://openstax.org/details/books/biology-2e>

ASSESSMENTS/COURSE REQUIREMENTS:

Homework:

Each lecture has a group of homework problems assigned to it.

The problems are chosen to prepare you for the hour exams.

If you understand and can do all the homework, you probably will do well on the exams.

To get the most benefit from homework, you should do the assignments on schedule.

It is important to keep up with these assignments!

Class Activities:

Class activities will allow you to apply your knowledge. These activities may be more challenging than the assigned homework. You will work in small groups to complete these activities. The class activities will be graded.

FINAL PROJECT/EXAM DESCRIPTION:

There are two hour exams during the course, plus a cumulative final exam.

Each exam counts 200points. Exam problems will be similar to the problems assigned as homework and the problems worked in class.

COURSE OUTLINE:

Week 1

1. Introduction, Biological Macromolecules, Chemistry of Life
2. Cellular Structure
3. Bioenergetics: respiration and metabolism
Lab1 – Cellular Morphology

Week 2

4. Bioenergetics: photosynthesis
5. The Cell Cycle
6. Meiosis and Sexual Reproduction
Lab2 – Enzyme Catalyzed Reactions and Respiration

Week 3

7. Mendelian genetics and heredity
8. DNA Structure and Function
9. Gene expression and control
Lab3 – Genetics

Week 4

10. Recombinant DNA technology
11. Bioethics
12. Genetic Diseases
Lab4 – Molecular Biological Methods

Week 5

13. Biotechnology and Genomics
14. Evolution and the Diversity of Life
15. The History of Life

FITCHBURG STATE UNIVERSITY UNDERGRADUATE GRADING POLICY and COURSE EVALUATION

Hour exams (200 points each)	400 points
Final exam	200 points
Homework	100 points
Class Activities	100 points
Lab	200 points

4.0 A 95 –100

<u>3.7</u>	<u>A-</u>	<u>92 – 94</u>
<u>3.5</u>	<u>A-/B+</u>	<u>89 - 91</u>
<u>3.3</u>	<u>B+</u>	<u>86 – 88</u>
<u>3.0</u>	<u>B</u>	<u>83 – 85</u>
<u>2.7</u>	<u>B-</u>	<u>80 – 82</u>
<u>2.5</u>	<u>B-/C+</u>	<u>77 – 79</u>
<u>2.3</u>	<u>C+</u>	<u>74 – 76</u>
<u>2.0</u>	<u>C</u>	<u>71 – 73</u>
<u>1.7</u>	<u>C-</u>	<u>69 – 70</u>
<u>1.5</u>	<u>C-/D+</u>	<u>67 – 68</u>
<u>1.3</u>	<u>D+</u>	<u>64 – 66</u>
<u>1.0</u>	<u>D</u>	<u>60 – 63</u>
<u>0.0</u>	<u>F</u>	<u>0 – 59</u>
-	<u>IN</u>	<u>Incomplete</u>
-	<u>IP</u>	<u>In Progress</u>
-	<u>W</u>	<u>Withdrawn</u>

CLASS POLICIES:

Submission of Assignments

Please submit all written assignments via Blackboard and REVEL. Assignments may not be submitted by email.

Late Coursework

Due to the condensed nature of the course, no late assignments will be accepted unless there is an extreme circumstance, such as a death in the family that can be verified.

Communication

Email communication will be done through your Fitchburg State email account. Please be sure your account is up to date and check your email regularly.

Modifications to Syllabus

You are responsible for any/all changes to the syllabus announced in an email or posted on Blackboard.

Class Environment

By nature, sociology involves the study of some controversial social issues. Becoming educated people requires that we not shy away from them, but rather learn how to address them tactfully. You are not going to agree with each other on some issues, but you should be respectful in your communication.

POLICY ON DISABILITY

Fitchburg State University encourages the full participation of individuals with disabilities in all aspects of campus living and learning. To support access and inclusion, FSU offers reasonable accommodations to students who have documented disabilities (e.g. physical, learning, psychiatric, sensory, etc.). If you require accommodations for this class, please provide me with a copy of your Accommodation Agreement as soon as possible so that we can discuss your specific needs. Any information that you share

with me will be held in the strictest confidence, unless you give me permission to do otherwise. If you require academic accommodations but do not have an Accommodation Agreement, please contact Disability Services as soon as possible to establish your eligibility for services.

GRADE APPEAL

If you disagree with the evaluation of your work or believe an improper grade has been assigned, an appeal may be followed. Please discuss the matter with the instructor and refer to the Fitchburg State University Grade Appeal Policy in the university catalog.

ACADEMIC INTEGRITY POLICY

This course will adhere to the university's policies on academic integrity, as outlined in the Code of Conduct and Disciplinary Processes Handbook, which may be downloaded as a PDF file from the website of the Office of Student Conduct, Mediation and Education: <http://www.fitchburgstate.edu/offices-services-directory/office-of-student-conduct-mediation-education/academic-integrity/>

Fitchburg State University encourages all Extended Campus students to take advantage of our online student services. We have created a "virtual student center" just for you. Here you will find access to Counseling Services, Career Services, The Student Activity Center, the university bookstore and many other helpful links. You can access our student center by going to the university homepage at <http://www.fitchburgstate.edu> and clicking on Offices and Services. Scroll down and click on Extended Campus Center. You will find links to Library Services, our Virtual Student Center and other important information.

FITCHBURG STATE UNIVERSITY DISTANCE LEARNING & EXTENDED CAMPUS LIBRARY SERVICES

The Gallucci-Cirio Library at Fitchburg State University provides a full range of library services including borrowing privileges; document delivery (books and articles mailed to your home); Interlibrary Loan; reference assistance via: phone, email, IM, Blackboard's Collaboration and Elluminate tools, Skype and in-person; library instruction; research help and more. Any questions relating to library services should be directed to the Linda LeBlanc, Access Services Librarian, at 978-665-3062 or dllibrary@fitchburgstate.edu. There is also a special section for Distance Learning and Extended Campus Services at <http://fitchburgstate.libguides.com/dlservices> outlining the wide range of services available to you and how to access them.

Students who are currently registered with the university may access any of the library's subscription databases, including an increasing number with full-text, by visiting the Gallucci-Cirio Library's homepage at <http://www.fitchburgstate.edu/academics/library> and clicking on the Research Databases button in the center of the page. Select the resource you want to access from the alphabetical or subject listing. Once you click on the database title you will be prompted for your Falcon Key logon information; this is the same logon you will use for your Fitchburg State email account and if you have any online Blackboard courses. If you do not know your Falcon Key username and password or if you have any problems logging in, contact the university's Technology Help Desk at 978-665-4500 or helpdesk@fitchburgstate.edu. The Library can issue you a temporary guest Falcon Key to use while the Technology Department is setting up your account: contact us at 978-665-3062 or dllibrary@fitchburgstate.edu

