

**McLennan**  
C O M M U N I T Y  
**C O L L E G E**

WACO, TEXAS

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**COURSE SYLLABUS**  
**AND**  
**INSTRUCTOR PLAN**

**Majors Biology I**

**1406.01**

**Liz Mitchell**

**NOTE: This is a 16-week course.**

**COVID 19 Notice:**

McLennan Community College is committed to providing you with every resource you need to reach your academic goals including your safety. We will continue to monitor the evolving situation with COVID 19 and adjust our safety guidelines to make sure we offer a safe environment for you and our faculty. Please make sure to consult your faculty and the MCC website at <https://www.mclennan.edu/crisis-management/coronavirus-updates/index.html> on any changes to these guidelines.

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**Course Description:**

Fundamental principles of living organisms will be studied, including physical and chemical properties of life, organization, function, evolutionary adaptation, and classification.

Concepts of cytology, reproduction, genetics, and scientific reasoning are included.

**Prerequisites and/or Corequisites:**

Must have passed the reading and writing portion of the TSI Assessment or have credit for INRW 0402. Semester Hours 4 (3 lec/3 lab)

**Course Notes and Instructor Recommendations:**

This course is for students interested in majoring in biology and/or students who are interested in pursuing a degree in a health profession (pre-med, pre-dental, pre-PA, pre-pharmacy, etc.).

As such, the purpose of this course is to lay foundational groundwork upon which many principles of biology will be built. Therefore, this is a content heavy course. Please make sure you have the time commitment necessary to be successful.

This is also a reading intense course. Students will be expected to read the material outside of class.

**Instructor Information:**

Instructor Name: Liz Mitchell

MCC Email: [emitchell@mclennan.edu](mailto:emitchell@mclennan.edu)

Office Phone Number: 254.299.8187 (If I am not in my office, please leave a message. I will be able to listen to the message on my cell phone).

Office Location: Science 220

Office/Teacher Conference Hours: TBD

Other Instruction Information: I can meet you either in-person or on Zoom. Zoom appointments will need to be scheduled ahead of time.

Other Instruction Information: I will be using Remind to send out important messages. Please sign up here. <https://www.remind.com/join/bybio>

**Required Text & Materials:**

Title: *Biology*

Author: Peter Raven, George Johnson, et al.

Edition: 12th

Publisher: McGraw-Hill

ISBN 13: 978-1260565959

ISBN 10: 1260565955

Title: *Custom Lab Manual Biology 1406/07*

Author: McLennan Community College/Liz Mitchell

Edition: 1st

Publisher: McGraw-Hill

ISBN 13: 978-1-307-77395-8

ISBN 10: 1-307-77395-9

\*Note: This book is ONLY available at the MCC bookstore. You will be required to bring this book to each class. Failure to do so will result in you not being able to complete the labs. You will be unable to make-up missed labs.

Students will need access to a computer or tablet with internet (smart phones will not work). All Reading Assignments are accessed through the Connect software platform. Students who do not have a computer at home can use the MCC library computers.

Your class is enrolled in Inclusive Access. This means your textbook was paid in your tuition fees. **Unless you specifically opted out of this option, your textbook has already been paid for.**

**However, you will need to pay for your lab manual separately.**

Please go to the bookstore to pick up your hardcopy, loose-leaf textbook. You will need a large 3-ring binder to keep your book and your graded labs.

**MCC Bookstore Website:** <http://www.mclennan.edu/bookstore/>

**Methods of Teaching and Learning:**

Lectures are dynamic and require student participation. Please come talk to me if you are unable to participate in lecture activities. PowerPoint will be used sparingly in class. Lectures will be conducted using class white boards and online resources (YouTube, KEGG, OMIM, etc.).

Weekly homework will be assigned to help students learn lecture material. Students will be given tests to assess their mastery of lecture material.

Weekly reading assignments will also be assigned to help students connect the material of the textbook to the material we are learning in class. These assignments are also created to help students understand the material more deeply and broadly.

Labs will help lead to deeper learning of lecture concepts. Labs will also facilitate an understanding of how scientific knowledge is created, scrutinized, and disseminated. Not all labs follow the lecture material.

Students will also be required to attend outside Supplemental Instruction (SI) activities. Students will be required to attend 7 SI sessions during 7 different weeks. Mandatory SI has been scientifically shown to help students achieve higher success in courses.

**Course Objectives and/or Competencies:**

Upon successful completion of this course, students will:

- Describe the characteristics of life.
- Explain the methods of inquiry used by scientists.
- Identify the basic requirements of life and the properties of the major molecules needed for life.
- Compare and contrast the structures, reproduction, and characteristics of viruses, prokaryotic cells, and eukaryotic cells.
- Describe the structure of cell membranes and the movement of molecules across a membrane.
- Identify the substrates, products, and important chemical pathways in metabolism.
- Identify the principles of inheritance and solve classical genetic problems.
- Identify the chemical structures, synthesis, and regulation of nucleic acids and proteins.
- Describe the unity and diversity of life and the evidence for evolution through natural selection.

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**Course Outline or Schedule:**

This schedule is subject to change. Information regarding course changes will be communicated on Bright Space. It is up to the student to check Bright Space to be aware of course schedule changes.

	Day	Date	Class Material	Lab	Lab Prep to Bring to Class
Week 1	Monday	10-Jan	Introduction	What is Science	
	Wednesday	12-Jan	Cells	Lab Safety page ix	Lab Safety page ix
Week 2	Monday	17-Jan	MLK Day; No Class		
	Wednesday	17-Jan	Cells	Cell Model Activity pg 251	
Week 3	Monday	24-Jan	Tissues	Scientific Method: The Process of Science pg 5	Scientific Method Lab Prep pg 1
	Wednesday	26-Jan	Tissues	Scientific Method: The Process of Science pg 5	
Week 4	Monday	31-Jan	Intro to Bio Molecules and Lipids	Measurements in Biology pg 19	Measurements in Biology Lab Prep pg 15

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Week 5	Wednesday	2-Feb	Intro to Cell Communication	Measurements in Biology pg 19	
	Monday	7-Feb	Proteins	The Microscope pg 33	Microscope Lab Prep pg 30
	Wednesday	9-Feb	Test 1 (2 hours)	Test: No lab	
Week 6	Monday	14-Feb	Enzymes	The Microscope pg 33	
	Wednesday	16-Feb	Transcription and Translation	The Cell pg 49	The Cell Prep pg 45
	Monday	21-Feb	Cell Signaling	The Cell pg 49	
Week 7	Wednesday	23-Feb	Cell Signaling	The Cell pg 49	
	Monday	28-Feb	Regulation of Gene Expression	KEGG Activity	
	Wednesday	2-Mar	Mutations	Biologically Important Molecules pg 69	Biologically Important Molecules Prep pg 65
Week 9	Monday	14-Mar	Genetics (Test 3 Material)	Biologically Important Molecules pg 69	

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	Wednesday	16-Mar	Test 2 (2 hours)	Test 2: No lab	
Week 10	Monday	21-Mar	Genetics	Genetics pg 17	Genetics Prep pg 99
	Wednesday	23-Mar	DNA Replication and PCR	Genetics pg 17 and ABO Blood Type pg 249	
	Monday	28-Mar	Cellular Respiration	Genetics pg 17	
Week 11	Wednesday	30-Mar	Cellular Respiration	Solutions, Acids, and Bases pg 165	Solutions, Acids, and Bases Prep (On BrightSpace)
	Monday	4-Apr	A Darwinian View of Life	Solutions, Acids, and Bases pg 165	
	Wednesday	6-Apr	Natural Selection	Evolution pg 153	Evolution Prep pg 149
Week 12	Monday	11-Apr	Genomes and Their Evolution (Test 4)	Evolution pg 153	
	Wednesday	13-Apr	Test 3 (2 hours)	Test 3: No Lab	
	Monday	18-Apr	Stem Cells and Mitosis	Set-Up Diffusion and Osmosis Lab pg 173	Diffusion and Osmosis Lab Prep (On BrightSpace)
Week 13					
Week 14					

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Week 15

Wednesday	20-Apr	Meiosis	Diffusion and Osmosis Lab pg 173	
Monday	25-Apr	Photosynthesis	Mitosis Lab pg 129	Mitosis Lab Prep pg 212
Wednesday	27-Apr	Cushion Day	Meiosis Lab pg 137	Meiosis Lab Prep pg 133
Monday	2-May	Final Exam		

**Course Grading Information:**

The grades in this course are calculated as a total percent.

Tests	65%
Labs	20%
Homework, Reading Assignments, and Quizzes	10%
Supplemental Instruction (required)	5%
	100%

Labs	
Pre-lab required to complete lab	10%
Lab grading (spot-check and evaluation combination)	90%

Tests 1 - 3	100 point
Final exam	50 points

Drops	
	2 lab grades
	10 homework, reading, and quiz category

The final exam will replace your lowest test grade.

Bonus:

1. For tests:
  - a. Turn in one practice test early (2.5 points), complete both practice tests (2.5 points).
  - b. If you complete both practice tests early, you can have a total of 5 bonus points on the test.
2. For the final:
  - a. After your 7 required SI sessions, attending up to 5 further SI sessions spread out over 5 weeks can result in 5 bonus points on the final exam. These points WILL be considered part of the final exam grade that is calculated for the purpose of replacing the lowest test grade.
  - b. You can complete one practice test early (2.5 points), can complete both practice tests (2.5 points), or turn in both practice tests early (5 points). These bonus points WILL



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NOT be considered part of the final exam grade that is calculated for the purpose of replacing the lowest test grade.

SI Attendance Requirements:

1. Students must attend SI sessions outside of class. Students will have several times to choose from throughout the week.
2. Students must attend 7 SI sessions throughout the semester. These 7 sessions must be attended on 7 different weeks.
3. Students will get an initialed card as attendance of SI. Students will give this card to the instructor the next class period.
4. Cards that are 2 class periods late will not be accepted.
5. Not having a card will mean students will not be counted present.
6. Students who arrive 5 minutes late or leave 5 minutes early will not be counted present.
7. Students who do not participate, are disruptive, are disrespectful, or cause problems will not be allowed to attend SI. These students will receive 0s for the remaining SI grades and will be ineligible to make these grades up.

**Late Work, Attendance, and Make Up Work Policies:**

Students get the following dropped grades:

Drops	
	2 lab grades
10 homework, reading, and quiz category	

Students are able to attend class on Zoom for reasons of illness or COVID exposure. Please email me 1 hour before class starts to pull Zoom up. (Please note: I will not see your email if you email me right before class starts or after class has started that you'd like to attend class via Zoom).

To be counted present for attendance, you need to answer the "white board questions" on the chat function. For any pictures that are drawn, draw them on a piece of scratch paper and email me a picture of the drawing.

Students who overuse the Zoom option for non-illness reasons may have the option to attend Zoom taken away.

Labs

All labs must be completed within the time frame given. If students do not finish the labs during the scheduled class time, those lab questions will not be completed and will be counted as incorrect.

In order to make sure you have enough time to complete the labs, it is important for you to have read over the entire lab, to know what the expectations are.

Students must have all pre-lab questions answered before coming to class. Not having the pre-lab questions answered will mean students will not be able to complete the lab for that day. This lab will not be eligible to be made up.

Students who do not bring their lab manuals to class will not be allowed to complete lab for the day. Those labs will not be made up.

If students do not bring their lab manuals on the day a lab is due, students will not be allowed to turn that lab in later.

All students get 2 dropped labs. If a student misses more than 2 labs (all for approved MCC-excused absences), the student and I will have a conversation to determine a course of action.

Students who miss up to 2 labs for any reason (including MCC excused absences) will not make-up the lab. These labs will be their drops. (Because of the prep involved in labs, and because many of the lab ingredients expire, lab make-ups are often not practical).

A 50% grade penalty will be issued for lab stations and/or lab rooms that are left without being cleaned. These grade penalties can be issued for entire classes. If a student is worried their station is not clean enough, ask me, and we can make sure everything is ok before you leave.

#### Homework and Reading Assignments

All homework and reading assignments are assigned at the beginning of the week. Students have the option to turn all homework in using a Bright Space function. It is up to the student to complete these assignments by the due date.

All Reading Assignments are due the Sunday before the week starts at 11:59 PM. For example, Week 2 Reading Assignments will be due the Sunday that Week 3 starts.

All homework is due the Monday class starts. For example, Week 3 homework will be assigned on Week 3. Students will have all of Week 3 to complete that homework. Week 3 homework will then be due by 8 am the Monday Week 4 starts.

No late homework or reading assignments will be accepted. Students have 10 dropped grades.

### Quizzes

Some pop quizzes will be given during class or lab time. Students who are not present when the quiz is given out will not be allowed to take the quiz (for example, if a student comes in late after the quiz has started, that student will not be allowed to take the quiz). Students who are on Zoom for that class period will also not be eligible to take the pop quiz.

Students get 10 drops in the homework, reading assignment, and quiz category. A missed quiz will be counted as the drop.

### Tests

Students have a 2 hour time frame to take the test (unless the student has ADA accommodations, in which case I will work with those accommodations).

Students who come late to the test will not be given additional time to complete the test.

If a student misses a test for any reason, that student can take that test on Friday, April 22<sup>nd</sup> in the 8:30 – 12:30 time frame with me OR on Friday, April 22<sup>nd</sup> during Testing Center hours. Students will need to tell me by Friday, April 15<sup>th</sup> if they plan to take the test with me or with the Testing Center.

If a student does not show up to the make-up test day, that test will remain a 0 and the final exam grade will replace that test.

If a student misses 2 tests, the first test will be made-up on make-up test day. The second test will be replaced by the final exam grade.

If a student misses 3 tests, the student must have an MCC-excused absence for the third test in order to coordinate with me to take that test.

If a student misses the final exam and does not have an MCC-excused absence, the final exam will be a 0. If a student has an MCC-excused absence, the student can coordinate with me to take the final exam by the end of the semester, Friday, May 6<sup>th</sup>.

The final exam for this class is Monday, May 2<sup>nd</sup>, from 8 – 10 am.

### Attendance

Students who attend on Zoom and answer the whiteboard questions via chat will be counted as present.

Attendance will be taken every class period. Students who miss 8 or more classes by March 25<sup>th</sup> will be dropped from the course.

The last day to drop is March 25<sup>th</sup>. After March 25<sup>th</sup>, students are not allowed to drop this course.

If a student wishes to drop, they need to notify me by 5 pm on March 25<sup>th</sup> via email. The student needs to specifically request to be dropped. The student's name and student ID need to be given. My email is [emitchell@mclennan.edu](mailto:emitchell@mclennan.edu).

### Supplemental Instruction

Because students only need to attend 7 SI sessions in a 15 week course, no make-up SI sessions will be offered.

### Covid Issues

If you have tested positive for Covid, please self-report on the MCC website.

[https://mclennan.col.qualtrics.com/jfe/form/SV\\_9FiKfG5D85livQN](https://mclennan.col.qualtrics.com/jfe/form/SV_9FiKfG5D85livQN)

Because the COVID guidelines have been quickly changing, please check Bright Space to know what the most up-to-date MCC requirements are.

### **Student Behavioral Expectations or Conduct Policy:**

Students are expected to maintain classroom decorum that includes respect for other students and the instructor, prompt and regular attendance, and an attitude that seeks to take full advantage of the education opportunity.

Students who continue to be disruptive in class, either to me or other students, will be asked to leave. Students will be required to meet with me and a third party (who may include the Division Director) before being allowed to return to class.

Students who do not participate in class will be issued an absence for that day. Continued non-participation will result in being required to meet with me and potentially the Division Director.

Students who are disruptive, disrespectful, or cause problems during SI will be issued one warning. At the second disruption/problem, students will not be allowed to attend SI. Students will receive a 0 for the remaining SI sessions.

Students are expected to attend SI for the duration of SI. Students who come late/leave early will not get credit for that SI session.

**[Click Here for the MCC Attendance/Absences Policy](https://www.mclennan.edu/highlander-guide/policies.html)**

**(<https://www.mclennan.edu/highlander-guide/policies.html>)**

Click on the link above for the college policies on attendance and absences. Your instructor may have additional guidelines specific to this course.

# McLennan

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## ACADEMIC RESOURCES/POLICIES

### **Accommodations/ADA Statement:**

Any student who is a qualified individual with a disability may request reasonable accommodations to assist with providing equal access to educational opportunities. Students should contact the Accommodations Coordinator as soon as possible to provide documentation and make necessary arrangements. Once that process is completed, appropriate verification will be provided to the student and instructor. Please note that instructors are not required to provide classroom accommodations to students until appropriate verification has been provided by the Accommodations Coordinator. For additional information, please visit [www.mclennan.edu/disability](http://www.mclennan.edu/disability).

Students with questions or who require assistance with disabilities involving physical, classroom, or testing accommodations should contact:

[disabilities@mclennan.edu](mailto:disabilities@mclennan.edu)

254-299-8122

Room 319, Student Services Center

### **Title IX:**

We care about your safety, and value an environment where students and instructors can successfully teach and learn together. If you or someone you know experiences unwelcomed behavior, we are here to help. Individuals who would like to report an incident of sexual misconduct are encouraged to immediately contact the Title IX Coordinator at [titleix@mclennan.edu](mailto:titleix@mclennan.edu) or by calling Dr. Drew Canham (Chief of Staff for Diversity, Equity & Inclusion/Title IX) at (254) 299-8645. Individuals also may contact the MCC Police Department at 299-8911 or the MCC Student Counseling Center at MCC at (254) 299-8210. The MCC Student Counseling Center is a confidential resource for students. Any student or employee may report sexual harassment anonymously by visiting <http://www.lighthouse-services.com/mclennan/>.

Go to McLennan's Title IX webpage at [www.mclennan.edu/titleix/](http://www.mclennan.edu/titleix/). It contains more information about definitions, reporting, confidentiality, resources, and what to do if you or someone you know is a victim of sexual misconduct, gender-based violence or the crimes of rape, acquaintance rape, sexual assault, sexual harassment, stalking, dating violence, or domestic violence.

**Student Support/Resources:**

MCC provides a variety of services to support student success in the classroom and in your academic pursuits to include counseling, tutors, technology help desk, advising, financial aid, etc. A listing of these and the many other services available to our students is available at <http://www.mclennan.edu/campus-resource-guide/>

College personnel recognize that food, housing, and transportation are essential for student success. If you are having trouble securing these resources or want to explore strategies for balancing life and school, we encourage you to contact a Success Coach by calling (254) 299-8226 or emailing [SuccessCoach@mclennan.edu](mailto:SuccessCoach@mclennan.edu). Students may visit the Completion Center Monday-Friday from 8 a.m.-5 p.m. to schedule a meeting with a Success Coach and receive additional resources and support to help reach academic and personal goals. Paulanne's Pantry (MCC's food pantry) provides free food by appointment to students, faculty and staff based on household size. Text (254) 870-7573 to schedule a pantry appointment. The Completion Center and pantry are located on the Second Floor of the Student Services Center (SSC).

**MCC Foundation Emergency Grant Fund:**

Unanticipated expenses, such as car repairs, medical bills, housing, or job loss can affect us all. Should an unexpected expense arise, the MCC Foundation has an emergency grant fund that may be able to assist you. Please go to <https://www.mclennan.edu/foundation/scholarships-and-resources/emergencygrant.html> to find out more about the emergency grant. The application can be found at [https://www.mclennan.edu/foundation/docs/Emergency\\_Grant\\_Application.pdf](https://www.mclennan.edu/foundation/docs/Emergency_Grant_Application.pdf).

**MCC Academic Integrity Statement:**

Go to [www.mclennan.edu/academic-integrity](http://www.mclennan.edu/academic-integrity) for information about academic integrity, dishonesty, and cheating.

**Minimum System Requirements to Utilize MCC's D2L|Brightspace:**

Go to <https://www.mclennan.edu/center-for-teaching-and-learning/Faculty-and-Staff-Commons/requirements.html> for information on the minimum system requirements needed to reliably access your courses in MCC's D2L|Brightspace learning management system.

**Minimum Technical Skills:**

Students should have basic computer skills, knowledge of word processing software, and a basic understanding of how to use search engines and common web browsers.

**Backup Plan for Technology:**

In the event MCC's technology systems are down, you will be notified via your MCC student email address. Please note that all assignments and activities will be due on the date specified in the Instructor Plan, unless otherwise noted by the instructor.

**Email Policy:**

McLennan Community College would like to remind you of the policy (<http://www.mclennan.edu/employees/policy-manual/docs/E-XXXI-B.pdf>) regarding college email. All students, faculty, and staff are encouraged to use their McLennan email addresses when conducting college business.

A student's McLennan email address is the preferred email address that college employees should use for official college information or business. Students are expected to read and, if needed, respond in a timely manner to college emails.

**Instructional Uses of Email:**

Faculty members can determine classroom use of email or electronic communications. Faculty should expect and encourage students to check the college email on a regular basis. Faculty should inform students in the course syllabus if another communication method is to be used and of any special or unusual expectations for electronic communications.

If a faculty member prefers not to communicate by email with their students, it should be reflected in the course syllabus and information should be provided for the preferred form of communication.

**Email on Mobile Devices:**

The College recommends that you set up your mobile device to receive McLennan emails. If you need assistance with set-up, you may email [Helpdesk@mclennan.edu](mailto:Helpdesk@mclennan.edu) for help.

**Forwarding Emails:**

You may forward emails that come to your McLennan address to alternate email addresses; however, the College will not be held responsible for emails forwarded to an alternate address that may be lost or placed in junk or spam filters.

**Disclaimer:**

The resources and policies listed above are merely for informational purposes and are subject to change without notice or obligation. The College reserves the right to change policies and other requirements in compliance with State and Federal laws. The provisions of this document do not constitute a contract.