

With the dramatic change in how instruction and student affairs function during the pandemic, the following is a proposed (and temporary) revision to the master syllabus template.

BIOL 1414 Introduction to Biotechnology or BITC 1411 Introduction to Biotechnology Master Syllabus

INSTRUCTIONS: FACULTY DELETE ALL RED PRINT– THESE ARE INSTRUCTIONS ☺

You must use the same grading scheme, policies and procedures. Any changes must have department chair approval.

SECTION I: COURSE INFORMATION

Section: XXXXX-XXX

Lecture: Room, day, time, blackboard

Lab: Room, day, time

Instructor: Name, title, department

Office Phone: Adjunct faculty must provide an ACC voice mail

Office Location: You must provide a location you will meet for your office hours, you substitute web meetings

Office Hours: adjunct faculty *must* post 1 office hour per course, full-time faculty is 5 in-person office hours. Include day, time, *and you must include the statement* “or by appointment”

E-mail: must provide and use your ACC email

Website: If you have one

Course Description:

COURSE DESCRIPTION

- **Credit Hours: 4**
- **Classroom Contact Hours per week: 3**
- **Laboratory Contact Hours per week: 3**

An introduction to the field of biotechnology including applications of biotechnology in molecular biology, biochemistry, research, bioethics, and laboratory safe practices in a regulated environment. The course is supplemented with exciting hands-on laboratory exercises, and real-world research and industry applications which enable the student to master basic skills in working in a biotechnology lab; solution preparation, safe handling of hazardous material, nucleic acid isolation, recombinant DNA cloning, PCR and ELISA. The course concludes with a bioscience career exploration including applied research, biomanufacturing, biomedical devices, and clinical trials.

Prerequisites:

Skills: O Prerequisites: One year of high school biology and one year of high school chemistry or co-requisite of BIOL 1406 or BIOL 1408. Course Type: T

Instructional Methodology:

There is both a laboratory and lecture component to this course, which must be taken together. There will be required readings from the textbooks, as well as occasional additional reading assignments from the literature. Both the lecture and laboratory components will require the use of the Internet and Blackboard which is made available to the student in the Austin Community College computer labs or learning center. **An emphasis is placed on active learning strategies for content mastery.**

Course Rationale

This course is designed to provide a fun, practical and hands-on exploration into the field of biotechnology. In support of Austin Community College's Mission Statement to support skills for "life-long learning", this course will challenge students to apply critical thinking skills to their readings, class activities, laboratory exercises, and classroom discussions about current topics in biotechnology. Although an emphasis is placed on each student's personal responsibility for constructing their new knowledge, opportunities for working collaboratively with groups will also be provided. This course is the first course in the Biotechnology Program and also a biology science elective.

Common Course Objectives

The Common Course Objectives for this course can be found here:

<https://drive.google.com/file/d/0BwPW7aiH90agQUJIYktuNWxYNEk/view>

Academic Student Learning Outcomes:

1. Students will demonstrate verbally and in writing knowledge of the field of biotechnology (including the historical development of the field) and applications of genomics. (Interpersonal skills and Personal Responsibility)
2. Utilizing the S.I. system of units, students will use a variety of laboratory tools, and equipment to learn about and develop basic lab skills such as pipetting, preparing solutions, and weighing and measuring. (Empirical and Quantitative Skills)
3. Students will demonstrate verbally, and in writing, knowledge of DNA, RNA, and protein structures.(Critical Thinking Skills)
4. Students will use technology to isolate, amplify, and detect DNA and proteins.
5. Students will demonstrate, both verbally and in writing, knowledge of scientific theory related to biotechnology techniques.
6. Students will be able to demonstrate their understanding of and to utilize proper laboratory procedures within a regulated environment.
7. Students will consider, discuss and debate current ethical and legal issues in biotechnology.(Communication Skills)

Course Student Learning Outcomes

The competency outcomes for this course reflect skills necessary in the biotechnology workforce which emphasize communication skills, punctuality, and teamwork in addition to molecular biology skills. The Biotechnology Program is accredited by The Texas Skill Standards System administered by the Texas Workforce Investment Council for integrated Skill Standards into the curricula: www.tssb.org/ctc/acc. The Texas Skill Standards System is composed of skill standards and credentials for sub-baccalaureate occupations with strong employment and earnings opportunity. For more information see the Texas Skill Standards here: www.tssb.org/community-and-technical-colleges and our website: <http://sites.austincc.edu/biotech/accreditation/>

R&D Skill Standards

A3 Operate equipment	B2 Perform assays and experiments	B3 Troubleshoot experiments and equipment	B4 Perform data analysis	B5 Communicate results	C1 Participate in employer-sponsored safety training	C3 Identify unsafe conditions and take corrective action
C4 Suggest continuous improvements	C5 Coordinate with work team	C7 Handle and dispose of hazardous materials	C8 Maintain security	D1 Maintain lab notebook	D Create documents	

Biomanufacturing Skill Standards

1.1 Follow Standard Operating Procedures (SOPs)	1.3 Document and analyze data	2.1 Clean laboratory environment	2.2 Attend company safety and security training	2.3 Report unsafe conditions	2.4 Maintain laboratory security
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Materials

- Textbooks:** Recommended: Ellyn Daugherty, *Biotechnology: Science for the New Millennium*. 2017. EMCParadigm Publications.
Recommended, but optional for those students with BS degrees: Lisa A. Seidman. *Basic Laboratory Calculations for Biotechnology*. 2008. Pearson. ISBN: 0132238101
- Lab Workbook:** Jack O'Grady. 2016. "*BIOL1414 Introduction to Biotechnology Laboratory Manual & Exercise Workbook*".
One copy of the lab manual will be supplied free as well as provided electronically
- Supplies:** 3-ring binder, fine tip black Sharpie, earphones and optional scientific calculator.
- Lab Safety:** Safety glasses with a rating of Z87, long pants, and comfortable shoes that cover the entire foot area. A disposable lab coat will be provided.
- Email:** You are **required** to communicate with your instructors using your ACCmail account ONLY. To obtain your email: <http://www.austincc.edu/accmail/> Instructions on forwarding your email to a more regularly monitored email address can be found there.
- Blackboard:** You are **required** to utilize Blackboard for this course. To access Blackboard you need an ACCeID. To activate your ACCeID: <http://www.austincc.edu/acceid>
To log on to Blackboard: <https://acconline.austincc.edu/webapps/portal/frameset.jsp>

SECTION II: GRADING SCHEME AND MISSED EXAM POLICY:

- Lecture & Lab Exams.** (350 points) The course is set up in three modules; module 1 & 2 exams will be worth 100 points each and the final module is comprehensive and worth 150 pts. Each exam will cover topics and concepts covered by lecture, lab and other assigned reading materials. The format of these exams will be diverse, and may include short answer, definitions, problems, discussions, and analysis, graphing and multiple choice questions. The hands-on portion format may require the student to identify or use equipment or interpret results.
- Homework & Class Participation Exercises.** (100 points) There will be 3 individual homework exercises in addition to a few group class activities. Format includes multiple choice, fill-in-the-blank, match-up, calculations, and draw/label figure.
- Class Project.** (100 pts) The class will participate in a team project to be determined by the class. This project will have short assignments throughout the semester totaling 100pts. Project format will include a project outline, research ideas & development, and a final short presentation and summary. Details on the assignment will be given in class.
- Soft Skills Evaluation.** (50 points). You will be graded on preparing for class, participation in class, team work, attendance, and safe behavior in the lab. This evaluation will cover areas such as technical skills, resourcefulness, prioritization, organization, problem solving, and quality of work. There will be an evaluation after each module to allow an opportunity to respond to feedback.
- Lab Workbook Exercises.** (350 points) Students will turn in lab workbook assignments each week. Format and assignments differs based on the exercise but may include creating lab protocols, internet research, data analysis, creating figures and diagrams from lab experiments and filling in forms. Lab workbook exercises are due one week after all the data has been collected for that lab.
- Lab Notebook.** (50 points) Students will maintain a laboratory notebook binder as instructed in the lab manual. This notebook will be submitted for grading (dates posted on the schedule).

7. **Bonus Assignments.** (20 points). There will be opportunities for bonus points offered throughout the semester. They will total no more than 2% of your final grade. Instructions for bonus points will be given in class and posted to Blackboard; they will be due no later than the last class day.

SUMMARY GRADING SCHEME:

<u>1. Content Knowledge:</u>	
Exams	350
Homework	100
<u>2. Employability Skills</u>	
Employee Skills Evaluation	50
Class Project	100
<u>3. Lab Skills</u>	
Lab Notebook	50
Lab Reports	<u>350</u>
Total Lecture Points	1000 (Divide total points by 10 = Grade %)

Grading Scale: 90-100% = A; 80-89% = B; 70-79% = C; 60-69% = D; < 60% = F

SECTION III - ACC & CLASS POLICIES

1. **Graded Assignments:** All assignments, including exams will be graded and returned one week after they are submitted for grading. Grades will be posted to Blackboard. If you find a discrepancy in your graded assignment and the grade posted to Blackboard, please notify me by email immediately so that it can be addressed.
2. **Pass/No-Pass** ACC has temporarily implemented a Pass/No Pass option for grading. Students are permitted (but not required) to convert any course sections to Pass/No-Pass grading. The following procedures will apply. After receiving their grade for the semester, students will have until {insert date] to elect Pass/No-Pass grading. Only grades of C or better in a course may be converted to P (Pass). Grades of D and F may be converted to NP (No-Pass). All courses for which students receive passing (P) grades will count toward ACC degree requirements, which may override some departmental or college policies. A grade of Pass/No-pass will not count toward a student's grade point average (GPA); however a grade of Pass will count toward earned semester hours. Students should consider the possible implications of electing the Pass/No-Pass option (e.g., on course transfer, GPA calculations, financial aid, etc.). Academic transcripts will have a note added indicating the Pass/No Pass grading option is due to the Corona-virus pandemic.
3. **Use of ACC Email Communication:** All College e-mail communication to students will be sent solely to the student's ACCmail account, with the expectation that such communications will be read in a timely fashion. ACC will send important information and will notify you of any college related emergencies using this account. Students should only expect to receive email communication from their instructor using this account. Likewise, students should use their ACCmail account when communicating with instructors and staff. Instructions for activating an ACCmail account can be found at <http://www.austincc.edu/accmail>
4. **Instructor Communication:** Per ACC policy, you must use only your ACCmail account when communicating with your instructor. You should check your email daily for time-sensitive communication from your instructor. You are expected to return communication within 72hrs. Emails

from your instructor will be returned within 24-48hours during normal business hours M-F. On weekends there may be a delay in communication until the following Monday.

5. **Lecture:** This classroom will be an active learning experience, sometimes referred to as a 'flipped classroom'. Short lectures will be given as outlined on the schedule, however, most classes will have videos, animations, practice exercises, and laboratory exercises to learn about new topics in biotechnology. **Classroom topics will closely follow the schedule so please complete the pre-class assignment *prior* to class to make the most of your classroom experience!**
6. **Lab:** The lab exercises are part of the 'flipped classroom' and there is a lab exercise performed most classes as outlined in the schedule and in the 'Lab Manual & Exercise Workbook'. Lab exercises will be performed in groups; however, each student should take complete, accurate, and clear notes into their own exercise workbook during the lab as they will be handing in their own workbook. All members of the group are expected to participate in the exercise and to work together.
7. **Expectations:** The purpose of this class is to explore the exciting world of biotechnology! For some of you this is your future career and is the first course in the Biotechnology Program, and for others this may be a general interest course or a science elective in a degree in a completely different field! It is important students understand that science courses require active participation and attendance in every class. **To successfully complete this course, regular class attendance, active participation and an additional 6-8 hrs of study time outside of class is needed to be successful in this course.**
8. **Attendance/Class Participation:** Regular and punctual class attendance is expected of all students. As with all math and science courses, topics build from each other and a missed class may result in a gap in knowledge that will prevent the student from understanding concepts being covered. **Class activities provide a significant component by which grades are assessed, and students must attend classes in order to earn these points.** Attendance will be taken at each class period, and students who are more than 15 minutes late for class will be marked as absent for that day. ***Students with excessive absences may be withdrawn from the course by the instructor.***
9. **Lecture & Lab Exams:** Exams are approximately 2.5 hours long and will be given in class during the regularly scheduled class time. If you are late to an exam, no extra time will be given. While taking an exam, students may not leave the room until they have completed their exam and turned it in for grading. ***If you have a medical condition that would require you to leave the room during the exam, you are responsible for arranging with the office of student disabilities, to take the written portion of the exam before the rest of the class takes it.***
10. **Missed Exam Policy:** Make-up exams will only be offered to students who provide the instructor with a written request along with documentation of an emergency. This is up to the discretion of the instructor.
11. **Late Work Policy:** Lab workbook exercises are due one week after the exercise is complete. Late work is accepted at the discretion of the instructor. ***I rarely accept late work so students don't fall behind in current/future work, however, there will one workbook exercise amnesty accepted on the last class where a student may submit one workbook for regrading for any reason.***
12. **Safety Statement:** Austin Community College is committed to providing a safe and healthy environment for study and work. You are expected to learn and comply with ACC environmental,

health and safety procedures and agree to follow ACC safety policies. Additional information on these can be found at <http://www.austincc.edu/ehs>. Because some health and safety circumstances are beyond our control, we ask that you become familiar with the Emergency Procedures poster and Campus Safety Plan map in each classroom. Additional information about emergency procedures and how to sign up for ACC Emergency Alerts to be notified in the event of a serious emergency can be found at: <http://www.austincc.edu/emergency-notifications>

Please note, you are expected to conduct yourself professionally with respect and courtesy to all. Anyone who thoughtlessly or intentionally jeopardizes the health or safety of another individual will be immediately dismissed from the day's activity, may be withdrawn from the class, and/or barred from attending future activities.

Laboratory Safety: Health and safety are paramount values in science classrooms, laboratories, and field activities. Students are expected to learn, understand and comply with environmental, health and safety (EHS) procedures and protocols, and must agree to abide by the ACC science safety policy. Specific safety information for each activity will be discussed at the beginning of the class activity. For those activities that require specific safety training, a student who is late and misses the safety training will not be able to participate in the activity. The comprehensive science safety policy can be found at: www.austincc.edu/sci_safe/. ***Before students may attend the laboratory classes, they must complete all of the following:***

1. Watch the ACC Science Safety video
2. Review the ACC Biology Lab Safety Policy and fill out the safety guide for your campus
3. Sign the ACC Biology Safety Contract.

Student use of Organisms policy is found here:

<http://www.austincc.edu/biology/labanimalpolicy.html> In the Biotechnology Program you may work with many different types of organisms, some of which may include human and animal cell culture, stem cells, plants, bacteria, yeast, fungi and algae.

13. **Student Insurance:** Students enrolled in lab and field courses are covered by student insurance if they are injured as a result of the lab or field activity. If you are injured during class, please notify your instructor immediately and fill out the designated injury forms.
14. **Electronic Devices:** Although the use of electronic devices such as calculators, notepads, laptops and smart phone applications is highly encouraged, we ask students not use class time to talk on their cell phone, text message or check email. ***Unapproved electronic devices are not permitted on your person while writing exams.***
15. **Withdrawal Policy:** It is the responsibility of each student to ensure that his or her name is removed from the roll should he or she decides to withdraw from the class. The instructor does, however, reserve the right to drop a student should they feel it is necessary. If a student decides to withdraw, they should also verify that the withdrawal is submitted before the Final Withdrawal Date. The student is also strongly encouraged to retain their copy of the withdrawal form for their records. Students who enroll for the third or subsequent time in a course taken since fall, 2002, may be charged a higher tuition rate, for that course. State law permits students to withdraw from no more than six courses during their entire undergraduate career at Texas public colleges or universities. With certain exceptions, all course withdrawals automatically count towards this limit. Details

regarding this policy can be found in the ACC college catalog. **Withdraw Dates: Are posted on the ACC academic calendar:** <http://www.austincc.edu/calendars/academic-calendar>

16. **Incomplete Award Policy:** An instructor may award a grade of “I” (Incomplete) if a student was unable to complete all of the objectives for the passing grade in a course. An incomplete grade cannot be carried beyond the established date in the following semester. The completion date is determined by the instructor but may not be later than the final deadline for withdrawal in the subsequent semester. In order to get an incomplete grade (“I”) in this course you must do all of the following **before the last class meeting:**
- Present a valid and well-documented reason, submitted in writing, for the instructor to give an incomplete grade. This should include the reason that the student has missed the official drop deadline for that semester.
 - Complete at least 70% of the course, and **have at least a 70% grade average in the course.**
 - Meet with your instructor to discuss what is involved in getting and finishing an incomplete. Incomplete grades must be completed by deadline on academic calendar. If not completed by that time, the incomplete grade becomes a failing grade (F).
 - Sign an Incomplete Grade Form, and give it to your lecture instructor prior to the last day of class.

Reinstatement Procedures: Reinstatement procedures will follow those outlined in the current ACC General catalog.

17. **Scholastic Dishonesty:** A student attending ACC assumes responsibility for conduct compatible with the mission of the college as an educational institution. Students have the responsibility to submit coursework that is the result of their own thought, research, or self-expression. Students must follow all instructions given by faculty or designated college representatives when taking examinations, placement assessments, tests, quizzes, and evaluations. Actions constituting scholastic dishonesty include, but are not limited to, plagiarism, cheating, fabrication, collusion, and falsifying documents. Penalties for scholastic dishonesty will depend upon the nature of the violation and may range from lowering a grade on one assignment to an “F” in the course and/or expulsion from the college. See the Student Standards of Conduct and Disciplinary Process and other policies at: <http://www.austincc.edu/handbook>
18. **Student Rights and Responsibilities:** Students at ACC have the same rights and protections under the Constitution of the United States. These rights include freedom of speech, peaceful assembly, petition and association. As members of the community, students have the right to express their own views, but must also take responsibility for according the same rights to others and not interfere or disrupt the learning environment. Students are entitled to fair treatment, are expected to act consistently with the values of the college, and obey local, state and federal laws. www.austincc.edu/srr

As a student of Austin Community College you are expected to abide by the Student Standards of Conduct.

<https://www.austincc.edu/students/students-rights-and-responsibilities/student-standards-of-conduct>

19. **Statement on Students with Disabilities:** Each ACC campus offers support services for students with documented disabilities. Students with disabilities who need classroom, academic or other accommodations must request them through the office of Student Accessibility Services (SAS).

Students are encouraged to request accommodations when they register for courses or at least three weeks before the start of the semester, otherwise the provision of accommodations may be delayed.

Students who have received approval for accommodations from SAS for this course must provide the instructor with the 'Notice of Approved Accommodations' from SAS before accommodations will be provided. Arrangements for academic accommodations can only be made after the instructor receives the 'Notice of Approved Accommodations' from the student.

Students with approved accommodations are encouraged to submit the 'Notice of Approved Accommodations' to the instructor at the beginning of the semester because a reasonable amount of time may be needed to prepare and arrange for the accommodations. Additional information about Student Accessibility Services is available at <http://www.austincc.edu/sas>

20. **ACC Policy Concerning Copyrighted Materials:** All class materials provided on the instructor's web page, Blackboard, CD, and/or in printed form (labs, objectives, assignments, etc.) may be copyrighted and may not be reproduced without the written consent of the copyright holder (this may be the instructor, ACC, or a separate third party entity or publisher). Reproduction consists of photocopying, scanning, copying, or posting files on a server or web site. Students currently registered for this section have permission to print one copy of course materials for their own personal use. No permission is given for posting any course materials on web sites or sharing with anyone not enrolled in this class.
21. **Testing Center Policy:** Under certain circumstances, an instructor may have students take an examination in a testing center. Students using the Academic Testing Center must govern themselves according to the Student Guide for Use of ACC Testing Centers and should read the entire guide before going to take the exam. To request an exam, one must have: [ACC Photo ID](#), Course Abbreviation (e.g., BIOL), Course Number (e.g. 1414), Course Synonym (e.g., 10123), Course Section (e.g., 005) and Instructor's Name. Do NOT bring cell phones to the Testing Center. Having your cell phone in the testing room, regardless of whether it is on or off, will revoke your testing privileges for the remainder of the semester. ACC Testing Center policies can be found at <http://www.austincc.edu/support-and-services/services-for-students/testing-services/instructional-testing>
22. **Student Support & Success Resources (Student & Instructional Services):** ACC strives to provide exemplary support to its students and offers a broad variety of opportunities and services. Information on these services and support systems is available at: <http://www.austincc.edu/support-and-services>
 - For help setting up your ACCeID, ACC Gmail, or ACC Blackboard, see a Learning Lab Technician at any ACC Learning Lab.
 - Links to many student services: <http://www.austincc.edu/current-students>
 - ACC Learning Labs provide free tutoring services to all ACC students currently enrolled in the course to be tutored. The tutor schedule for each Learning Lab may be found at: <http://www.austincc.edu/support-and-services/tutoring-and-academic-help>
 - The Biotechnology Department offers Open Labs for tutoring and assistance with mastering laboratory skills. Information on open labs and other Biotechnology Department student success initiatives are found at: <http://www.austincc.edu/biotech>

- For help setting up your ACCeID, ACC Gmail, or ACC Blackboard, see a Learning Lab Technician at any ACC Learning Lab. Or contact the helpdesk: <http://www.austincc.edu/helpdesk/>
- The ACC student handbook can be found here: <http://www.austincc.edu/handbook>
- For feedback to the Biotechnology program we have provided an anonymous feedback online form. You can find this at our website here: <http://sites.austincc.edu/biotech/student-suggestion-form/>

23. Senate Bill 212 and Title IX Reporting Requirements

Under Senate Bill 212 (SB 212), the faculty and all College employees are required to report any information concerning incidents of **sexual harassment, sexual assault, dating violence, and stalking** committed by or against an ACC student or employee. Federal Title IX law and College policy also require reporting incidents of **sex- and gender-based discrimination and sexual misconduct. This means faculty and non-clinical counseling staff cannot keep confidential information about any such incidents that you share with them.**

If you would like to talk with someone confidentiality, please contact the District Clinical Counseling Team who can connect you with a clinical counselor on any ACC campus: (512) 223-2616, or to schedule online: <https://www.austincc.edu/students/counseling> . While students are not required to report, they are encouraged to contact the Compliance Office for resources and options: Charlene Buckley, District Title IX Officer, (512) 223-7964; compliance@austincc.edu .

If a student makes a report to a faculty member, the faculty member will contact the District Title IX Officer for follow-up.

24. Student Complaints

A defined process applies to complaints about an instructor or other college employee. You are encouraged to discuss concerns and complaints with college personnel and should expect a timely and appropriate response. When possible, students should first address their concerns through informal conferences with those immediately involved; formal due process is available when informal resolution cannot be achieved.

Student complaints may include (but are not limited to) issues regarding classroom instruction, college services and offices on the basis of actual or perceived race, color, national origin, religion, age, gender, gender identity, sexual orientation, political affiliation, or disability.

Further information about the complaints process, including the form used to submit complaints, is available at: <http://www.austincc.edu/students/students-rights-and-responsibilities/student-complaint-procedures>

25. Campus Carry

The Austin Community College District concealed handgun policy ensures compliance with Section 411.2031 of the Texas Government Code (also known as the Campus Carry Law), while

maintaining ACC's commitment to provide a safe environment for its students, faculty, staff, and visitors. Beginning August 1, 2017, individuals who are licensed to carry (LTC) may do so on campus premises except in locations and at activities prohibited by state or federal law, or the college's concealed handgun policy.

It is the responsibility of license holders to conceal their handguns at all times. Persons who see a handgun on campus are asked to contact the ACC Police Department by dialing 512-223-7999. Please refer to the concealed handgun policy online at <http://austincc.edu/campuscarry>

26. Discrimination Prohibited

The College seeks to maintain an educational environment free from any form of discrimination or harassment including but not limited to discrimination or harassment on the basis of race, color, national origin, religion, age, sex, gender, sexual orientation, gender identity, or disability.

Faculty at the College are required to report concerns regarding sexual misconduct (including all forms of sexual harassment and sex and gender-based discrimination) to the Manager of Title IX/Title VI/ADA Compliance. Licensed clinical counselors are available across the District and serve as confidential resources for students.

Additional information about Title VI, Title IX, and ADA compliance can be found in the ACC Compliance Resource Guide available at:

<https://drive.google.com/file/d/1o55xINAWNvTYgl-fs-JbDyuaMFDNvAjz/view>

BIOL 1414 Introduction to Biotechnology STUDENT INFORMATION SHEET

Name (Print)	
Phone Number	
Why are you taking this course?	
I have received the syllabus and I have the co/prerequisites listed	_____ (Signature) _____ Date

Lecture Grades	Attendance				Quiz/Homework		Lab Grades
	CLASS		CLASS		Assign	Grade	Safety:
Module 1 Exam: _____ / 100	1		17		M1 HMWK		1:
	2		18		M2 HMWK		2:
	3		19		M3 HMWK		3:
Module 2 Exam: _____ / 100	4		20				4:
	5		21		Class Project	100pts	5:
Module 3 Exam: _____ / 150	6		22		Assign 1		6:
	7		23		Assign 2		7:
	8		24		Assign 3		8:
	9		25		Presentation		9:
Bonus Points: _____ / 20	10		26				10:
	11		27				11:
	12		28				12:
Total Points: _____ / 1000	13		29				13:
	14		30				14:
Grade Percent: _____ %	15		31				<i>You will perform 12 of 14 labs</i>
	16		32				
Final Grade: _____	Attendance: _____ / 10 Self Eval: _____ / 10 Peer Eval: _____ / 10 Final Eval: _____ / 20 Employee Eval: _____ / 50				Homework: _____ / 100 Class Project: _____ / 100		Total Lab Report: _____ / 350 Lab Notebook: _____ / 50

BIOL1414 - LECTURE & LAB SCHEDULE

Please note that changes may occur during the semester

Date	LECTURE & READING ASSIGNMENT	LAB
8/27	Class & Syllabus Overview, Study Skills	
8/29	*Mandatory Safety Training	*Mandatory Safety Training
	MODULE 1: BASIC BIOTECHNICIAN SKILLS Ch 1-What is Biotechnology?	Class & Syllabus Overview, Study Skills *Mandatory Safety Training
	Ch 2-The Raw Materials of Biotechnology	Lab Unit 1: Introduction to Biotech Lab
	Lecture: Quality in Biotechnology	Lab unit 1: finish
	Ch 3-Basic Skills of the Biotech workplace	Lab Unit 2: Basic tools in the Biotechnology lab
	Ch 3 – solutions, Seidman: Ch 2, 11	Lab Unit 2: Finish
	Preparing Solutions: Ch 12, 13, 14 Seidman	Lab Unit 3: Calculations
	Lecture: Graphing: Ch 5 & Ch 15 Seidman	Lab Unit 3: Preparing solutions
	MODULE 2: BASIC BIOTECH LAB EQUIPMENT Ch 4-Intro to DNA Seidman: Ch 22	Lab Unit 3: Finish & Data analysis
	Module 1 Exam (Ch1-3, lab 1-3)	Module 1 Review & lab catch up Introduction to DNA barcoding
	Ch 7 – Spectrophotometers & NanoDrop	Lab Notebook due, M1 homework due
	Ch 5-Intro to Studying Proteins	Lab Unit 4: DNA Barcode – DNA isolation
	Ch 6 – Identifying Biotech Product	Lab Unit 4: DNA Analysis
	Ch 7 – Spectrophotometers & Assays, Seidman: Ch 16	Lab Unit 5: ELISA – Assay Design
	Graphing & Data analysis Discussions	Lab Unit 5: ELISA – Assay
	Module 1 & 2 Review & Lecture catch up	Lab Unit 5: ELISA – Analysis
	Module 2 Exam (Ch 4-7, Lab 4-5)	
	MODULE 3: ADVANCED BIOTECH TECHNIQUES Lecture: Microbiology & Bacterial Culturing	Lab Notebook & M2 homework due
	Ch8 – Producing Recombinant Products	Lab Unit 6A: Pour plates, starter culture
		Lab Unit 6: Transformation Restriction digest bioinformatics exercise (Lab 8A)
		Lab Unit 6: Transformation results Lab Unit 11: DNA Barcode: PCR amplification
	Ch9 – Bringing Biotech Product to market	Lab Unit 7: Transformed culture Inoculation Lab Unit 11: DNA Barcoding Analysis & sequencing
		Lab Unit 7: Plasmid Isolation & Analysis
	Ch10 – Plant Biotechnology, Seidman: Ch 23	Lab Unit 9: Inoculate cultures
	Ch 11 – Biotechnology in Agriculture	Lab Unit 9: GFP Purification
	Ch 12 – Medical Biotechnology	Lab Unit 12-A: PCR-based VNTR on Human DNA
	Ch 13- DNA Technologies, Seidman: Ch 24	Lab Unit 12-B: Analysis Lab Unit 13: DNA Barcoding Bioinformatics
	Ch 14- Biotechnology Research & Application	Lab Unit 14: Career Exploration & Resume Building
	Lecture: Creating a great presentation!	Class time to work on Bioinformatics, presentations & resumes
		Work on presentations & resumes
	Semester Review	Class Presentations
	MODULE 3 COMPREHENSIVE EXAM	All outstanding graded work & lab notebook due
		Class wrap up, lab clean up, return graded work

