Your University of Choice

COURSE SYLLABUS

Term: SPRING 2017

Course: BIOL 230 – Microbiology lecture

Instructor Information:	
Instructor Name	Dr. Fiona Groninger-Poe
Office Number:	331
Phone Number:	(219) 473-4357 <leave a message!>
Email:	fpoe@ccsj.edu To contact Dr. Poe using e-mail: 1. Use your CCSJ account 2. Put "Micro" or "Microbiology" in the subject line 3. Compose and send your e-mail
Hours Available:	Office hours are posted outside of room 331; typically available 1:30-2:30 pm Monday through Thursday with additional hours on Tuesdays after 10 am
Instructor Background: B.S. Manchester University (Chemistry, 2008); Ph.D. University of Illinois at Urbana-Champaign (Biochemistry, 2014); Science Olympiad Volunteer Event Supervisor (2014-present); American Society for Microbiology science teaching fellow (2013); Robert L. Switzer Teaching Award (2012). Research interests include microbiology, enzymology, agar degradation pathways, and sugar metabolic pathways in plant pathogens.	

Course Information:	
Course Time:	Lecture: Monday and Wednesday 8:30 – 10:00 am Lab: Monday 10:15-11:45 am
Classroom:	334
Prerequisites:	C or better in, BIOL 115, BIOL 115L, BIOL 205, BIOL 205L and concurrent enrollment in BIOL 230L
Required Books and Materials:	*Microbiology* 8th edition by Jacquelyn G. Black; ISBN: 9780470541098 A separate lab notebook is REQUIRED (LAB-100-7GW-D). Preferably, the notebook will contain carbonless-copy pages. These are available through the bookstore and also through Amazon.
Learning Outcomes/ Competencies: Students will: • Describe how mutations, horizontal gene transfer, and selective pressure can lead to a rise in antibiotic resistance	

- Critique the evidence that supports the endosymbiotic theory in regards to mitochondria and chloroplasts
- Explain how public health policies can alter epidemic/pandemic progression
- Explain why the traditional definitions of species using reproductive isolation do not apply to Bacteria and Archaea
- Hypothesize about evolutionary relatedness of organisms based on phylogenetic trees
- Explain how bright-field microscopy works and why specimens must be stained
- Compare and contrast how specialized cellular features (pili/fimbriae, capsules, lipopolysaccharides, spores, flagella) of Bacteria and Archaea improves a microbes survival in a given environment

Course Description:
A 3 credit course. BIOL 230 is where emphasis is placed on ultrastructure, genetics, molecular biology, physiology and metabolism of microorganisms; role of microorganisms in food, water, agriculture, biotechnology, infectious diseases, and immunology.

Learning Strategies:
Lecture, BlackBoard, active learning exercises, small group work, problem-based learning, case studies

Experiential Learning Opportunities:
Problem-based active learning activities, experimental design, writing/presenting original research to peers

Assessments:

Lecture Exams	90 minutes, 100 points each, 4 total; exam 4 is cumulative. Lowest score is dropped	100 pts x 3 = 300 pts
Homework	Due at the start of each lecture; students will write 3 questions over the lecture topic for the day based on the assigned reading. 3 pts per question, 1 point for name and date. 23 total, lowest three scores are dropped	10 pts/day = approx. 200 pts
Class Participation	Respectful demeanor, prepared for class, no distractions, helps group with in-class work, does not surf internet or sleep during class; three lowest scores in this category are dropped	10 pts/day = approx. 200 pts

Grading Scale:

	100 – 92: A	91 – 90: A-
89 – 88: B+	87 – 82: B	81 – 80: B-
79 – 78 : C+	77 – 72: C	71 – 70 : C-
69 – 68: D+	67 – 62: D	61 – 60: D-
59 and below	F	

Course Schedule:

Class Date	Assignments due	Class Discussion/Activities
Week 1: Jan 9 - 12 Introduction to microbiology and chemistry of living systems (Ch. 1 and 2)	Purchase textbook Purchase lab notebook if needed Read corresponding chapter in textbook prior to lecture In class 1 In class 2 Homework 1 – 3 questions over assigned reading, due at start of lecture 2.	Introduction to microbiology and chemistry of living systems (Ch. 1 and 2)
Week 2: Jan 16-19 Prokaryotes vs. eukaryotes review; microscopy and staining (Ch 3) Light Microscopy and Techniques of Light Microscopy (Ch 4) **JAN 16 – NO CLASSES** **JAN 17 – Last day for course changes**	In class 3 In class 4 Read corresponding chapter in textbook prior to lecture Homework 2 Homework 3	Prokaryotes vs. eukaryotes review; microscopy and staining (Ch 3) Light Microscopy and Techniques of Light Microscopy (Ch 4)
Week 3: Jan 23 -26 Taxonomy (Ch 9)	Read corresponding chapter in textbook prior to lecture In class 5 In class 6 Homework 4 Homework 5	Taxonomy (Ch 9)
Week 4: Jan 30 – Feb 2 Essential concepts of metabolism (Ch 5) *****EXAM 1 – Feb 7***** **Covers weeks 1 through 3**	Read corresponding chapter in textbook prior to lecture In class 7 Homework 6	**Exam 1** Essential concepts of metabolism (Ch 5)
Week 5: Feb 6 – 9 growth and culturing of bacteria (Ch 6) **Feb 6 –** Last day to withdraw without instructor approval **FEB 6 - MIDTERM**	Read corresponding chapter in textbook prior to lecture In class 8 In class 9 Homework 7 Homework 8	growth and culturing of bacteria (Ch 6)
Week 6: Feb 13 – 16	Read corresponding chapter in textbook prior to lecture In class 10	Microbial genetics (Ch 7)

Microbial genetics (Ch 7)	In class 11 Homework 9 Homework 10	
Week 7: Feb 20 - 23 Gene transfer and genetic engineering (Ch 8)	Read corresponding chapter in textbook prior to lecture In class 12 In class 13 Homework 11 Homework 12	Gene transfer and genetic engineering (Ch 8)
Week 8: Feb 27 – Mar 2 **SPRING BREAK**		
Week 9: Mar 6 - 9 Eukaryotic organisms and parasites ****EXAM 2 – MAR 8**** **Covers weeks 4 through 7**	Read corresponding chapter in textbook prior to lecture In class 14 Homework 13	**Exam 2** Eukaryotic organisms and parasites
Week 10: Mar 13 - 16 Host-microbe relationships (Ch 14)	Read corresponding chapter in textbook prior to lecture In class 15 In class 16 Homework 14 Homework 15	Host-microbe relationships (Ch 14)
Week 11: Mar 20 – 23 Basic principles of adaptive immunity and immunization (Ch 17)	Read corresponding chapter in textbook prior to lecture In class 17 In class 18 Homework 16 Homework 17	Basic principles of adaptive immunity and immunization (Ch 17)
Week 12: Mar 27 – 30 Viruses (Ch 10)	Read corresponding chapter in textbook prior to lecture In class 19 In class 20 Homework 18 Homework 19	Viruses (Ch 10)
Week 13: Apr 3 - 6 Applied microbiology (Ch 26)	Read corresponding chapter in textbook prior to lecture In class 21 In class 22 Homework 20 Homework 21	Applied microbiology (Ch 26)
Week 14: Apr 10 - 13 Environmental microbiology (Ch 25) **April 14, 15 - Easter Recess**	Read corresponding chapter in textbook prior to lecture In class 23 In class 24 Homework 22 Homework 23	Environmental microbiology (Ch 25)

Week 14: Apr 17 – 20 *****EXAM 3 – APRIL 17***** **Covers weeks 9 through 12** **April 21 – LAST DAY TO WITHDRAW**	Read corresponding chapter in textbook prior to lecture In class 25	**Exam 3** Review
Week 15: Apr 24 – 27 **SEMESTER EXAMINATIONS** **Exam 4 - TBA**	No assignments due	**Exam 4 - TBA**

I reserve the right to change this schedule to meet the needs of the class.

Responsibilities	
Attending Class	You cannot succeed in this class if you do not attend. We believe that intellectual growth and success in higher education occur through interaction in the classroom and laboratories. However, we do not want to penalize students for participating in college-sponsored events. When you miss class because of a college event, you must give notice of your absence in advance, and you are responsible for all missed work. Being absent doesn't excuse you from doing class work; you have **more** responsibilities to keep up and meet the objectives of this course. Attendance is counted as being present from the first 10 minutes of class until the end of lecture and lab. It is the student's responsibility to make attendance a priority. Anyone missing after the first 10 minutes of class will be marked absent unless a written excuse is provided within 24 hours of the occurrence. Similarly, anyone leaving early without a written excuse will be counted as absent. Participation through regular attendance is required to be successful in this course. Therefore, if a student is absent more than three (3) times (excessive tardiness is counted as absence), the student will be subjected to a grade of F or FW per policy stated under the Withdrawal from Classes section on this syllabus. In the event of absence during an **exam**, the student will receive a ZERO (0) on that exam. The lowest exam score is dropped, so that exam score will not be considered when determining the final grade. If a student is absent during more than one exam, the student will receive a ZERO (0) for each exam, but only one grade will be dropped. It is the student's responsibility to ensure attendance on exam dates. In the event of multiple excused absences (with acceptable documentation), it is the

	student's responsibility to contact the instructor to determine an appropriate course of action. In the event of absence during **lab**, the student must contact the instructor within 24 hours of the absence to determine an acceptable course of action. Each laboratory exercise is different, and in some cases a make-up lab would be impractical due to costs or time restrictions. As with exams, one lab report is dropped so one absence is permitted without penalty. For excused absences, make-up labs *may* be permitted at the instructor's discretion only if an acceptable substitute assignment can be determined. ALL WORK IS DUE ON THE DUE DATE SPECIFIED IN THIS SYLLABUS OR ON BLACKBOARD. If a student is absent on lab 2, the student must still turn in lab 1 due that day. Contact the instructor if an extension is needed. See "Turning In Your Work" below.
Turning In Your Work	You cannot succeed in this class if you do not turn in all your work on the day it is due. Due dates are specified for each assignment on this syllabus; any changes will be announced in class and posted on BlackBoard. **ASSIGNMENTS WILL NOT BE ACCEPTED AFTER THEIR DUE DATES.** You may request an extension in writing at least 24 hours in advance of the due date for assignments, but it is up to the instructor's discretion whether or not to allow an extension. **If you are absent the day that an assignment is due, follow these guidelines:** • IN-CLASS ACTIVITIES: it is the student's responsibility to collect the assignment and do this work independently after an absence. Credit is awarded for excused absences only. • LAB REPORTS: turn in via BlackBoard, e-mail, campus mail, or handed in to the professor on its scheduled due date; **you must contact the professor** to determine what to do about missing the lab section. All assignments can be submitted via e-mail if a link is not provided through BB. It is the student's responsibility to request extensions in writing from the instructor.
Using Electronic Devices	Electronic devices can only be used in class for course-related purposes. If you text or access the Internet for other purposes, you may be asked to leave, in which case you will be marked absent and will lose participation points for the day.
Participating in Class	You must be on time, stay for the whole class and speak up in a way that shows you are prepared for class. If you are not prepared for class discussion, you may be asked to leave, in which case you will be marked absent and lose participation points for the day.

	Students must be prepared for class, polite and respectful, help with in-class group work, show attentiveness throughout class, and ensure that conversations stay on topic. Two points will be deducted for each infraction, up to the maximum points for the day. Grade notes will be entered on BlackBoard describing the score.
Doing Your Own Work	If you turn in work that is not your own, you are subject to judicial review, and these procedures can be found in the College Catalog and the Student Planner. The maximum penalty for any form of academic dishonesty is dismissal from the College. Using standard citation guidelines to document sources avoids plagiarism. **For this class, you MUST use American Chemical Society (ACS) style**, available online for free at the following link: http://pubs.acs.org/userimages/ContentEditor/1246030496632/chapter14.pdf Be sure to use your own words *completely* (use your own sentence structure not just a thesaurus to change a few words or phrases), cite your source parenthetically in the text, and attach a works cited page to the end of the assignment. If your paper is similar in sentence structure, phrasing, figures, etc, to another student's both students will be punished based on the severity of the plagiarism. **PLEASE NOTE:** All papers may be electronically checked for plagiarism.
Withdrawing from Class	After the last day established for class changes has passed (see the College calendar), you may withdraw from a course by following the policy outlined in the CCSJ Course Catalog.

Resources	
Student Success Center:	The Student Success Center provides faculty tutors at all levels to help you master specific subjects and develop effective learning skills. It is open to all students at no charge. You can contact the Student Success Center at 219 473-4287 or stop by the Library.
Disability Services:	Disability Services strives to meet the needs of all students by providing academic services in accordance with Americans with Disabilities Act (ADA) guidelines. If you believe that you need a "reasonable accommodation" because of a disability, contact the Disability Services Coordinator at 219-473-4349.
CCSJ Alerts:	Calumet College of St. Joseph's emergency communications system will tell you about emergencies, weather-related closings, or other incidents via text, email, or voice messages. Please sign up for this important service annually on the College's website at: http://www.ccsj.edu/alerts/index.html. In addition, you can check other media for important information, such as school closings:

	Internet: http://www.ccsj.edu **Radio:** WAKE – 1500 AM, WGN – 720 AM, WIJE – 105.5 FM, WLS – 890 AM, WZVN – 107.1 FM, WBBM NEWS RADIO 78 **TV Channels:** 2, 5, 7, 9, 32

Emergency Procedures

MEDICAL EMERGENCY

EMERGENCY ACTION
1. Call 911 and report incident. 2. Do not move the patient unless safety dictates. 3. Have someone direct emergency personnel to patient. 4. If trained: Use pressure to stop bleeding. 5. Provide basic life support as needed.

FIRE

EMERGENCY ACTION
1. Pull alarm (located by EXIT doors). 2. Leave the building. 3. Call 911 from a safe distance, and give the following information: • Location of the fire within the building. • A description of the fire and how it started (if known)

BUILDING EVACUATION

1. All building evacuations will occur when an alarm sounds and/or upon notification by security/safety personnel. **DO NOT ACTIVATE ALARM IN THE EVENT OF A BOMB THREAT.**
2. If necessary or if directed to do so by a designated emergency official, activate the building alarm.
3. When the building evacuation alarm is activated during an emergency, leave by the nearest marked exit and alert others to do the same.
4. Assist the disabled in exiting the building! Remember that the elevators are reserved for persons who are disabled. **DO NOT USE THE ELEVATORS IN CASE OF FIRE. DO NOT PANIC.**
5. Once outside, proceed to a clear area that is at least 500 feet away from the building. Keep streets, fire lanes, hydrant areas and walkways clear for emergency vehicles and personnel. The assembly point is the sidewalk in front of the college on New York Avenue.
6. **DO NOT RETURN** to the evacuated building unless told to do so by College official or emergency responders.

IF YOU HAVE A DISABILITY AND ARE UNABLE TO EVACUATE:

Stay calm, and take steps to protect yourself. If there is a working telephone, call 911 and tell the emergency dispatcher where you are **or** where you will be moving. If you must move,

1. Move to an exterior enclosed stairwell.
2. Request persons exiting by way of the stairway to notify the Fire Department of your location.
3. As soon as practical, move onto the stairway and await emergency personnel.

4. Prepare for emergencies by learning the locations of exit corridors and enclosed stairwells. Inform professors, and/or classmates of best methods of assistance during an emergency.

HAZARDOUS MATERIAL SPILL/RELEASE

EMERGENCY ACTION
1. Call 911 and report incident. 2. Secure the area. 3. Assist the injured. 4. Evacuate if necessary.

TORNADO

EMERGENCY ACTION
1. Avoid automobiles and open areas. 2. Move to a basement or corridor. 3. Stay away from windows. 4. Do not call 911 unless you require emergency assistance.

SHELTER IN PLACE

EMERGENCY ACTION
1. Stay inside a building. 2. Seek inside shelter if outside. 3. Seal off openings to your room if possible. 4. Remain in place until you are told that it is safe to leave.

BOMB THREATS

EMERGENCY ACTION
1. Call 911 and report incident. 2. If a suspicious object is observed (e.g. a bag or package left unattended): • Don't touch it! • Evacuate the area.

TERRORISM AND ACTIVE SHOOTER SITUATIONS

EMERGENCY ACTION
1. Call 911 and report intruder.

RUN, HIDE OR FIGHT TIPS:

1. **Prepare** – frequent training drills to prepare the most effectively.
2. **Run and take others with you** – learn to stay in groups if possible.
3. **Leave the cellphone.**
4. **Can't run? Hide** – lock the door and lock or block the door to prevent the shooter from coming inside the room.
5. **Silence your cellphone** -- use landline phone line.
6. **Why the landline?** It allows emergency responders to know your physical location.
7. **Fight** – learn to "fight for your life" by utilizing everything you can use as a weapon.

8. **Forget about getting shot – fight**! You want to buy time to distract the shooter to allow time for emergency responders to arrive.
9. **Aim high** – attack the shooter in the upper half of the body: the face, hands, shoulder, neck.
10. **Fight as a group** – the more people come together, the better the chance to take down the shooter.
11. **Whatever you do, do something** – "react immediately" is the better option to reduce traumatic incidents.