

BIOL 221L: Clinical Microbiology Lab

Location:	Evening
Address:	1001 Rogers Street Columbia, MO 65216
Section:	19FALL1/BIOL/221L/EVA
Semester Credit Hours:	2
Class Day(s) and Time(s):	Monday, Wednesday 7:45 PM - 10:25 PM from August 26, 2019 to October 19, 2019

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📘 Course Information

Catalog Description

Laboratory experiences to complement BIOL 221. Additional lab fee applicable to main campus day offerings.

Prerequisite: BIOL 110L. **Corequisite:** BIOL 221.

Additional Notes

Attendance Policy: All students are expected to attend each class period as assigned. When you miss class, you miss important announcements, directions and assignments. If you come in late, the same applies. Attendance is even more urgent for labs. Give the nature of the work, labs cannot be made up. I will not interrupt class to get you caught up.

Labor Day: Class will not meet on Monday, September 2; the make up day will be Friday, September 6.

📖 Textbooks

As part of TruitionSM, students will receive their course materials automatically as described below.

- 📖 Karin Knisely . (2017). *A Student Handbook for Writing in Biology* (5th). W.H. Freeman & Company. *Physical Book*
- 📖 Steven Obenauf. (2018). *Laboratory Manual for Microbiology Fundamentals A Clinical Approach* (3rd). McGraw-Hill. *eText*

Bookstore Information

Visit <https://www.ccis.edu/bookstore.aspx> for details.

eText Information

If a course uses an eText, (see textbook information above) the book will be available directly in Desire2Learn (D2L) seven days before the session begins, if registered for courses prior to that date. Upon first login to VitalSource, students should use their CougarMail email address; alternate email addresses cannot be used. More information about how to use the VitalSource platform, including offline access to eTexts, can be found in D2L.

Physical Course Materials Information

Students enrolled in courses that require physical materials will receive these materials automatically at the shipping address on file with Columbia College. Delivery date of physical materials is dependent on registration date and shipping location. Please refer to confirmation emails sent from Columbia College for more details on shipping status.

Returns: Students who drop a class are responsible for returning any physical course materials that were shipped. To initiate a return, visit [Ingram Returns](#) to generate a pre-paid return label. Materials from dropped courses must be returned within 30-days of receipt. **Failure to return physical items from a dropped course will result in a charge to the student account for all unreturned items.**

Note: Students who opt-out of having their books provided as part of [TuitionSM](#) are responsible for purchasing their own course materials.

↓ Technology Requirements

THIS IS A TECHNOLOGY-ENRICHED COURSE WHICH COMBINES IN-SEAT INSTRUCTION WITH ONLINE LEARNING.

Participation in this course will require the basic technology for all classes at Columbia College:

- A computer with reliable internet access
- A web browser
- Acrobat Reader
- Microsoft Office or another word processor such as Open Office

For more information, see [technical requirements](#).

🔗 Course Learning Outcomes

- Demonstrate proficiency with basic laboratory techniques of clinical microbiology, including culturing of microbes, sterile techniques, staining procedures, microscopy and physiological tests used for identification of common pathogenic microorganisms.
- Demonstrate familiarity with immunology including normal flora of the human.

🎓 Grading

Grading Scale

Grade	Points	Percent
A	900 - 1000	90-100%
B	800 - 899	80-89%
C	700 - 799	70-79%
D	600 - 699	60-69%
F	0 - 599	0-59%

Grade Weights

Assignment Category	Points	Percent
Lab Questions	400	40%
Case Studies	160	16%

Lab Quizzes	100	10%
Unknowns	340	34%
Total	1000	100%

Schedule of Due Dates

Week 1

Assignment	Points	Due
Labs 1,2,3 Week 1 Day 1	48	Week 1 Day 2
Labs 7,8,9 Week 1 Day 2	27	Week 2 Day 2
Case Study 1 Week 1 Day 1	10	Week 1 Day 1
Case Study 2 Week 1 Day 2	10	Week 1 Day 2
Quiz 1 Week 1 Day 2	10	Week 1 Day 2

Week 2

Assignment	Points	Due
Labs 10,11,12,13 Week 2 Day 1	57	Week 3 Day 1
Labs 14,15,16,17 Week 2 Day 2	27	Week 3 Day 2
Case Study 3 Week 2 Day 1	10	Week 2 Day 1
Case Study 4 Week 2 Day 2	10	Week 2 Day 2
Quiz 2 Week 2 Day 2	15	Week 2 Day 2

Week 3

Assignment	Points	Due
Labs 20,21,22 Week 3 Day 1	24	Week 4 Day 1
Labs 23,24 Week 3 Day 2	36	Week 4 Day 2
Case Study 5 Week 3 Day 1	10	Week 3 Day 1
Case Study 6 Week 3 Day 2	10	Week 2 Day 2
Quiz 3 Week 3 Day 2	15	Week 3 Day 2
Unknown 1 Week 3 Day 1	70	Week 4 Day 1

Week 4

Assignment	Points	Due
Labs 25,26 Week 4 Day 1	22	Week 5 Day 1
Labs 27 Week 4 Day 2	18	Week 5 Day 2
Case Study 7 Week 4 Day 1	10	Week 4 Day 1
Case Study 8 Week 4 Day 2	10	Week 4 Day 2
Quiz 4 Week 4 Day 2	15	Week 4 Day 2

Week 5

Assignment	Points	Due
Labs 28 Week 5 Day 1	7	Week 6 Day 2
Labs 35,36 Week 5 Day 2	38	Week 6 Day 2
Case Study 9 Week 5 Day 1	10	Week 5 Day 1
Case Study 10 Week 5 Day 2	10	Week 5 Day 2
Quiz 5 Week 5 Day 2	15	Week 5 Day 2
Unknown 2 Week 5 Day 1	70	Week 6 Day 1

Week 6

Assignment	Points	Due
Lab 38 Week 6 Day 1	9	Week 6 Day 2
Labs 39,40 Week 6 Day 2	27	Week 7 Day 1
Case Study 11 Week 6 Day 1	10	Week 6 Day 1
Case Study 12 Week 6 Day 2	10	Week 6 Day 2

Assignment	Points	Due
Week 6 Day 2		
Week 7		
Assignment	Points	Due
Labs 41, 42 Week 7 Day 1	24	Week 7 Day 2
Labs 43,44 Week 7 Day 2	15	Week 8 Day 1
Case Study 13 Week 7 Day 1	10	Week 7 Day 1
Case Study 14 Week 7 Day 2	10	Week & Day 2
Quiz 7 Week 7 Day 2	10	Week 7 Day 2
Unknown 3 Week 7 Day 1	175	Week 8 Day 2
Week 8		
Assignment	Points	Due
Labs 45,46 Week 8 Day 1	30	Week 8 Day 2
Lab 47: Week 8 Day 2	16	Week 8 Day 2
Case Study 15 Week 8 Day 1	10	Week 8 Day 1
Case Study 16 Week 8 Day 2	10	Week 8 Day 2
Quiz 8 Week 8 Day 2	10	Week 8 Day 2
Total Points: 1000		

Course Outline

Click on each week to view details about the activities scheduled for that week.

Week 1: Use of Microscopes, Aseptic Techniques, and Staining

Labs 1,2,3 Week 1 Day 1

Lab 1: Use of the Microscope (15 pts)

Lab 2: Aseptic Techniques. (27 pts)

Lab 3: Isolation Steak Plate (6 pts)

Labs 7,8,9 Week 1 Day 2

Lab 7: Bacterial Motility

Lab 8: Simple Staining and Smear Preparation

Lab 9: Negative Staining

Case Study 1 Week 1 Day 1

Case Study 2 Week 1 Day 2

Quiz 1 Week 1 Day 2

Covers Labs 1-3.

Week 2: Staining Techniques

Labs 10,11,12,13 Week 2 Day 1

Lab 10: Capsule Staining

Lab 11: Gram Staining

Lab 12: Acid Fast Staining

Lab 13: Endospore Staining

Labs 14,15,16,17 Week 2 Day 2

CH14: Blood Agar

CH15: Mannitol Salt Agar

CH16: Eosin Methylene Blue Agar

CH17: Mac Conkey Agar

Case Study 3 Week 2 Day 1

Case Study 4 Week 2 Day 2

Quiz 2 Week 2 Day 2

Covers labs 7-13

Week 3: Oxygen Growth Requirements, Oxidase Test, Plate Counts, and Killing by UV

Labs 20,21,22 Week 3 Day 1

Lab 20: Oxygen and Growth

Lab 21: Catalase Test

Lab 22: Oxidase Test

Labs 23,24 Week 3 Day 2

Lab 23: Plate Count

Lab 24: Killing by UV

Case Study 5 Week 3 Day 1

Case Study 6 Week 3 Day 2

Quiz 3 Week 3 Day 2

Covers labs 14-22.

Unknown 1 Week 3 Day 1

Week 4: ELISA and Electrophoresis

Labs 25,26 Week 4 Day 1

CH25: Antimicrobial Susceptibility Testing

CH26: ELISA

Labs 27 Week 4 Day 2

Lab 27: Electrophoresis

Case Study 7 Week 4 Day 1

Case Study 8 Week 4 Day 2

Quiz 4 Week 4 Day 2

Covers labs 23-26.

Week 5: Transformation and Test Media

Labs 28 Week 5 Day 1

Lab 28: Transformation

Labs 35,36 Week 5 Day 2

Lab 35: Hemagglutinin Inhibition Assay

Lab 36: Entero Pluri Test

Case Study 9 Week 5 Day 1

Case Study 10 Week 5 Day 2

Quiz 5 Week 5 Day 2

Covers labs 27,28.

Unknown 2 Week 5 Day 1

Week 6: Testing Media

Lab 38 Week 6 Day 1

Lab 38: DNase test

Labs 39,40 Week 6 Day 2

Lab 39: Gelatin Hydrolysis

Lab 40: Starch Hydrolysis

Case Study 11 Week 6 Day 1

Case Study 12 Week 6 Day 2

Quiz 6 Week 6 Day 2

Week 7: Test Media

Labs 41, 42 Week 7 Day 1

Lab 41: Casein Hydrolysis

Lab 42: Phenol Red Broth

Labs 43,44 Week 7 Day 2

Lab 43: Triple Sugar Iron Agar

Lab 44: Litmus Milk

Case Study 13 Week 7 Day 1

Case Study 14 Week 7 Day 2

Quiz 7 Week 7 Day 2

Covers chapters 39-42.

Unknown 3 Week 7 Day 1

Week 8: Test Media and Unknowns

Labs 45,46 Week 8 Day 1

Lab 45: IMViC

Lab 46: Urease

Lab 47: Week 8 Day 2

Lab 47: Nitrate Reduction

Case Study 15 Week 8 Day 1

Case Study 16 Week 8 Day 2

Quiz 8 Week 8 Day 2

+ Additional Resources

Online databases are available at library.ccis.edu. You may access them using your CougarTrack login and password when prompted.

Technical Support

If you have problems accessing the course or posting your assignments, contact your instructor, the Columbia College Technology Solutions Center, or the D2L Helpdesk for assistance. If you have technical problems with the VitalSource eText reader, please contact VitalSource. Contact information is also available within the online course environment.

- Columbia College Technology Solutions Center: CCHelpDesk@ccis.edu, 800-231-2391 ex. 4357
- D2L Helpdesk: helpdesk@d2l.com, 877-325-7778
- VitalSource: support@vitalsource.com, 1-855-200-4146

Online Tutoring

Smarthinking is a free online tutoring service available to all Columbia College students. Smarthinking provides real-time online tutoring and homework help for Math, English, and Writing. Smarthinking also provides access to live tutorials in writing and math, as well as a full range of study resources, including writing manuals, sample problems, and study skills manuals. You can access the service from wherever you have a connection to the Internet. I encourage you to take advantage of this free service provided by the college.

Access Smarthinking through CougarTrack at [Students -> Academics -> Resources](#).

! Columbia College Policies and Procedures

The policies set forth in the [Policy Library](#) are the current official versions of College policies and supersede and replace any other existing or conflicting policies covering the same subject matter. For more information on policies applicable to students, see [Student Policies](#). For more information on policies applicable to the entire Columbia College community, see [College-Wide Policies](#).

Students are expected to read and abide by the College policies. Policies of particular interest to students include, but not limited to the following:

- Graduate Grading Policy
- Undergraduate Grading Policy
- Registration Policy and Procedures
- Withdrawal Policy
- Alcohol and Other Drugs Policy
- Family Educational Rights and Privacy Act (FERPA)

Additional Policies:

Academic Integrity and Plagiarism

Academic integrity is a cumulative process that begins with the first college learning opportunity. Students are responsible for knowing and abiding by the [Academic Integrity Policy and Procedures](#) and may not use ignorance of either as an excuse for academic misconduct. Additionally, all required papers may be submitted for textual similarity review to Turnitin.com for the detection of plagiarism. All submitted papers may be included in the Turnitin.com reference database for the purpose of detecting plagiarism. This service is subject to the Terms and Conditions of Use posted on the Turnitin.com site.

Disability Resources

If you have a disability that requires an accommodation, please speak with the instructor and consult the [Student Accessibility Resources](#) office. Student Accessibility Resources staff will determine appropriate accommodations and will work with your instructor to make sure these are available to you. To find additional information, see our [ADA and Section 504 Policy for Students](#).

Notice of Non-Discrimination and Equal Opportunity:

The College has a process through which students, faculty, staff and community members who have experienced or witnessed incidents of discrimination, harassment, or retaliation on the basis of protected status, can report their experiences to a College official. For more information, see our [Non-Discrimination and Equal Opportunity Policy and Complaint Resolution Procedure](#).

Title IX and Sexual Misconduct

The College is committed to addressing the issues of discrimination, harassment and sexual misconduct in the educational and workplace landscape and will continue to modify policies, procedures and prevention efforts as needed. For more information, see the College's [Title IX and Sexual Misconduct Policy](#).

Course Policies and Procedures:

Attendance Policy

Columbia College students are expected to attend all classes and laboratory periods for which they are enrolled.

For classes with an online component, attendance for a week includes submitting any assigned online activity. Assigned activities are scheduled prior to the course commencing. Assigned activity due dates are subject to change based on actual course progression and will be adjusted as necessary. Attendance for the week is based upon the date work is submitted. A class week is defined as the period of time between Monday and Sunday (except for week 8, when the work and the course will end at 11:59 PM Central Time on Saturday.) The course and system deadlines are based on the Central Time Zone.

Students are directly responsible to instructors for class attendance and work missed during an absence for any cause. If absences jeopardize progress in a course, the College reserves the right to drop or withdraw students from classes. For additional information, see the Administrative Withdrawal for Non-Attendance heading in the [Withdrawal Policy](#).

CougarMail

All students are provided a CougarMail account when they enroll in classes at Columbia College. You are responsible for monitoring email from that account for important messages from the College and from your instructor.

Students should use email for private messages to the instructor and other students. The class discussions are for public messages so the class members can each see what others have to say about any given topic and respond.

Late Assignment Policy

All classes rely on participation and a commitment to your instructor and your classmates to regularly engage in the reading, discussion and writing assignments. You must keep up with the schedule of reading and writing to successfully complete the class.

No late assignments will be accepted without the prior approval of the instructor.

Acceptance of a late assignment is at the discretion of the instructor.

Make-up examinations may be authorized for students who miss regularly-scheduled examinations due to circumstances beyond their control. Make-up examinations must be administered as soon as possible after the regularly scheduled examination period and must be administered in a controlled environment.

Student Conduct

All Columbia College students, whether enrolled in a land-based or online course, are responsible for behaving in a manner consistent with Columbia College's [Student Conduct Code](#) and [Acceptable Computing Use Policy](#). Students violating these policies or any other College policy will be referred to the office of Student Affairs and/or the office of Academic Affairs for possible disciplinary action. The Student Code of Conduct, the [Student Behavioral Misconduct Policy and Procedures](#), and the Acceptable Computing Use Policy can be found in the Policy Library at ccis.edu/policies. The adjunct faculty member maintains the right to manage a positive learning environment all students must adhere to the conventions of online etiquette when enrolled in a course with an online component.