

Microbiology Laboratory (BIOL 330L)
Fall 2010

Tue. & Thu. 2:30-3:50 (01) or 4:00-5:20 (02), SCI 222

Instructor: Dr. Vladislav Gulis

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Office Hours: Tue. 9-11:15 & 12:30-1:30, Wed. 9-10:30, Thu. 10-1:30, or contact me for an appointment.

Prerequisite: BIOL 121 and 122. **Corequisite:** BIOL 330.

Lab Manual: No lab manual required. Handouts will be provided by the instructor. However, you will need loose-leaf binder in order to keep track of them.

Blackboard: Blackboard will be used for this class. A copy of the syllabus, your points/grades and other pertinent information will be posted. Check it regularly.

Course description: This course is intended as a general overview of the microbial world, including bacteria, viruses and eukaryotic microorganisms (e.g., fungi, algae). The structure, nutrition, growth, diversity, etc. will be covered. Some areas of applied microbiology, such as medical and food microbiology will also be introduced to the student. Labs are designed to illustrate topics discussed in lectures.

Objectives: To ensure that students learn and understand major topics and principles in microbiology and master general microbiological techniques that will give them sufficient background to take more advanced courses in the area of microbiology, either as an undergraduate or graduate student or as a student in a medical, dental or other health-related school.

Student learning outcomes: By the end of the semester, a student

- will be able to demonstrate a general understanding of major topics and principles in microbiology (e.g., cell structure, microbial metabolism, bacterial genetics, microbial interactions with humans and microbial diseases)
- will be able to recall facts, compare, contrast and discuss various microorganisms, concepts and processes of relevance to modern microbiology
- will master various “hands-on” microbiological techniques as well as be able to interpret data and draw conclusions based on the experiments in the lab

Assessment and Grading: The student’s understanding of major topics and principles in microbiology, the ability to learn and apply microbiological techniques, analyze experimental data and draw conclusions will be assessed during the labs. The student's success will be assessed *via* graded labs, midterm and final lab practical exams. Both a midterm and final lab exam will include practical exercises that would demonstrate your proficiency with certain techniques and a written portion. In addition, five labs will be graded based on reports/answers to practical questions.

Confirmed cheating or plagiarism on an exam or assignment will result in a grade of “F” for that assignment.

Point distribution

Assignment	Points
Graded labs	100
Lab midterm	80
Lab final	100
Total	280

Grading scale

Grade	%	Points
A	90-100	252-280
B+	85-90	238-251
B	80-85	224-237
C+	75-80	210-223
C	70-75	196-209
D+	65-70	182-195
D	60-65	168-181
F	0-60	0-168

Attendance: Lab attendance is mandatory and there are no make-ups for labs. Make-up exams are only given for university-excused absences. See current CCU catalog for details.

Cell phones: Use of cell phones, PDAs, etc. during the class is both disruptive and disrespectful to your colleagues. You will be asked to leave the class after the second offense. In addition, there is a possibility of contaminating your electronic devices and contracting an infection.

Disabilities: Students with disabilities should see me at the beginning of semester so special arrangements can be made, if necessary. Also, please contact the Office of Disability Services.

Tentative Schedule

Date	Lab Topic*
Thu, Aug. 19	Lab safety, Microscopy I
Tue, Aug. 24	Microscopy II
Thu, Aug. 26	Media preparation / Isolation techniques
Tue, Aug. 31	Isolation/selective media
Thu, Sep. 2	Isolation/selective media
Tue, Sep. 7	Gram stain
Thu, Sep. 9	Environmental factors

Tue, Sep. 14	Environmental factors / Enterotube II
Thu, Sep. 16	Enterotube II
Tue, Sep. 21	Titer of a bacteriophage
Thu, Sep. 23	Titer of a bacteriophage
Tue, Sep. 28	Bacterial transformation
Thu, Sep. 30	Bacterial transformation
Tue, Oct. 5	Lab midterm (practical)
Thu, Oct. 7	Lab midterm (practical)
Tue, Oct. 12	Isolation of microorganisms from soil
Thu, Oct. 14	Isolation of microorganisms from soil
Tue, Oct. 19	Fungal diversity
Thu, Oct. 21	Algal diversity
Tue, Oct. 26 Last day to drop with a "W"	Synthetic epidemic
Thu, Oct. 28	Synthetic epidemic
Tue, Nov. 2	Election Day Holiday – No lab
Thu, Nov. 4	No lab
Tue, Nov. 9	Antibiotics
Thu, Nov. 11	Antibiotics
Tue, Nov. 16	Microbiota of throat, skin, urine
Thu, Nov. 18	Microbiota of throat, skin, urine
Tue, Nov. 23	Thanksgiving Break - No Lab
Thu, Nov. 25	Thanksgiving Break - No Lab
Tue, Nov. 30	Lab Final (practical) = Food microbiology
Thu, Dec. 2	Lab Final (practical) = Food microbiology

*tentative and subject to change at the discretion of the instructor