

**CHM 4930, Section B933; CHM 6306, Section B061;
Special Topics in Chemical Biology: Antibiotics**

Spring 2021

Professor	Jeffrey D. Rudolf Office: 302G Chemistry/Chemical Biology Building (CCB) Phone: 352.294.7221 E-mail: jrudolf@chem.ufl.edu
Class Periods	Monday, Wednesday, and Friday, Period 3 (9:35 am – 10:25 am) Zoom Classroom (Meeting ID: 963 5375 3205; Passcode: 6306) https://ufl.zoom.us/j/96353753205?pwd=SGdJbEpXODhrTmNkTGpSWWJ3SjNmZz09
Office hours	Office hours will be conducted exclusively online via Canvas/email correspondence or individually scheduled Zoom appointments. I will respond within 24 hours (and usually sooner) of any email request.
Course Objectives	This class focuses on the chemical and biochemical aspects of antibiotics, their mechanisms of action and methods of (self-)resistance, and current challenges and opportunities in antibiotic research. After completing this course, the student will be able to: (i) identify and describe the major classes of antibiotics and their targets, (ii) recognize the common mechanisms of antibiotic resistance, (iii) discuss traditional and state-of-the-art (bio)chemical methods for antibiotics research, and (iv) analyze and interpret key concepts from primary literature on current antibiotics research. Students will also gain experience in oral and written scientific communication.
Optional Textbooks	<i>There is no required textbook for this course.</i> Primary instructional resources will be papers and reviews from the current literature. These materials will be provided online on the course e-Learning site (http://elearning.ufl.edu). Some lecture material will be based on: <i>Antibiotics: Challenges, Mechanisms, Opportunities</i> , Walsh, C. and Wencewicz, T.
Class Schedule	A tentative course schedule is available at the course e-Learning site. Topics will include: <ol style="list-style-type: none">1. Peptidoglycan biosynthesis in bacteria2. Inhibitors of cell wall synthesis, membrane integrity, protein synthesis, DNA/RNA effectors, thymidine synthesis3. Mechanisms of resistance including antibiotic modification or destruction, efflux pumps, target modification, biofilms4. How to find new antibiotics and address the antibiotic resistance problem including underexploited pathways and targets and prospects for identifying and using new molecules and targets
Grading	Current UF grading policies can be found at https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx .

Letter grades will be curved with approximate grade ranges (subject to change):

A = >92	B+ = >88	C+ = >78	D+ = >68
A- = >90	B = >82	C = >72	D = >62
	B- = >80	C- = >70	D- = >60

The course grade will be based on:

1. Participation in class discussions! (10%)
2. *Submission of Weekly Topic Questions* (20%)
3. *Answers for the Weekly Topic Questions* (20%)
4. *Research Paper* presentation (50%)
 - a. This component of the course is a multi-part assignment ending with an in-class presentation. The three assignments and presentation will be individually graded and combined to form your overall grade for this assignment. Student presentations will be scheduled at the beginning of the semester.
 - i. Pick a topic and paper
 - ii. Annotation list of jargon/abbreviations (5%)
 - iii. Describe main text figures (5%)
 - iv. Find and summarize 2 directly related papers (5%)
 - v. Presentation (35%)

For more information on the weekly assignments and research paper presentation, see the information available online on the Canvas course site.

Late submission of assignments will result in the deduction of points. The respective grade will be reduced by 20% if submitted late but prior to grading. After the assignments are graded, no late work will be accepted. The instructor may waive the late penalty to a student who presents legitimate circumstances. There is no excuse for failing to communicate prior to the deadline.

Class Attendance

100% attendance is expected but not graded; however, participation is graded. Any assigned readings serve as a starting point and the classroom lectures will explain and expand upon this material. Excused absences are consistent with university policies in the undergraduate catalog and require appropriate documentation (<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>).

Make-Up Work

Make-up work will only be allowed under extremely rare circumstances. Any make-up work will need to be planned far in advance of the exam.

Course Evaluation

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at

<http://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>. One anonymous informal mid-semester evaluation will give me an opportunity to improve during the semester and you a chance to benefit from your own evaluations.

Class Demeanor

Students are expected to arrive to class on time and behave in a manner that is respectful to the instructor and to fellow students. Opinions, questions, and answers given by other students should be respected in discussion, and conversations that do not contribute to the discussion should be held at minimum, if at all.

Zoom Demeanor

The participation portion of your grade for this class will be calculated on the basis of your attendance and your participation in class activities. Since the pedagogical approach of this course depends heavily on student engagement and interaction, you are required, at a minimum, to participate in class activities through the audio function of Zoom. Your video presence is invited as well to enhance instructor–student and student–student engagement.

Avoid the use of other distracting media during class and mute yourself if there is background noise that will be distracting to your fellow students. Class sessions will not be recorded and comments in the “chat” feature will not be recorded or shared. Unauthorized recording and unauthorized sharing of class sessions is prohibited.

COVID Policy

This course is online and does not have any in-person components. Therefore, there are not COVID restrictions for this course, but please continue to follow proper UF procedures in response to the COVID-19 pandemic.

Academic Honesty

We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.”

Diversity and Inclusion

We believe in equality for all and we welcome all ethnicities, races, genders, sexual orientations, cultures, faiths, ages, disabilities, and identities with respect. Each student is unique and brings their individual perspectives to our classroom and program. We are committed to maintaining an inclusive environment where each student is welcomed, respected, and supported during their educational and scientific journey.

Students with Disabilities

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once

registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Additional Information

Your well-being is important to the University of Florida. The *U Matter, We Care* initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the *U Matter, We Care* Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352.392.1575. The *U Matter, We Care* Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.