COURSE DESCRIPTION

This course is primarily designed to provide pre-nursing and related health career students with a fundamental understanding of introductory medical microbiology with a focus on those microorganisms that cause disease. The first half of this course is designed to be introductory in nature and will cover broad concepts in microbiology including bacteria, protists, parasites, viruses and fungi. The second half of the course is more specific and will cover immunology and specific microbial diseases by body system. There will of necessity be some memorization but only enough to allow you to apply facts to building concepts and a well-rounded understanding of this rapidly advancing field of science.

BASIC INFORMATION ABOUT THE COURSE

Professor: Dr. Cynthia Maurstad
Class Meeting Times: Tuesdays and Thursdays: 11:00am – 12:15pm
Location: Miller Science, Room 334
Corequisite: BIOL 3020 (Microbiology for Science Majors Lab)
ABOUT YOUR PROFESSOR

Office: Miller Science Building, Room 111
Phone: 936-468-2038
E-mail: Cynthia.Maurstad@sfasu.edu
Office Hours: In person or Zoom
Tuesdays and Thursdays, 9:30 -10:30am
Wednesdays, 12:00 noon – 3:00pm

Background:
I’m an Air Force BRAT, growing up on Air Force bases all over the United States as my father was an officer and a KC-135 tanker pilot. Both my parents were from East Texas (Crockett and Frankston) so we always knew we’d end up back in the area. Upon my Dad’s retirement from the Air Force, we ended up in Nacogdoches where I completed my last two years of high school (Go, Dragons!) and then went to Texas A&M – College Station. I took a LOT of summer classes at SFA- some right here in this building! I have a BS-EDCI in Biology and History from Texas A&M. Later in life and two daughters later, I had the opportunity to go back to graduate school where I earned a Ph.D. in Immunology from The University of Louisiana at Lafayette. I have taught or been on the faculty at The University of Louisiana at Lafayette, Del Mar College – Corpus Christi, Texas A&M University – Corpus Christi, San Jacinto College- Houston, The University of Texas MD Anderson Cancer Center School of Health Professions and here at SFA. I have taught courses in biology, pathophysiology, anatomy & physiology, immunology and microbiology.

My Interests
No surprise, I’m an Aggie through and through. My family and I have Aggie football season tickets. Fall is my favorite time of the year! As mentioned above, I have two daughters and also extended family all over East Texas. I’m a grandmother to four amazing grandchildren that keep me on my toes. I love to hang out with friends, machine quilt when I can find the time, read, watch sports, murder mysteries and sci-fi fun stuff, sing and go dancing.
### BIOL 3421 Microbiology for Science Majors
#### Fall 2023 Lecture Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>DATE</th>
<th>TOPIC</th>
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| 1    | Tues, Aug., 29<sup>th</sup>  
Thurs., Aug, 31<sup>st</sup> | Introduction to Class  
Evolution of Microorganisms (Ch. 1) |
| 2    | Tues, Sept. 5<sup>th</sup>  
Thurs., Sept. 7<sup>th</sup> | Evolution of Microorganisms (Ch. 1)  
Microscopy (Ch. 2) |
| 3    | Tues., Sept., 12<sup>th</sup>  
Thurs., Sept, 14<sup>th</sup> | Microscopy (Ch. 2)  
TBD |
| 4    | Mon., Sept. 19<sup>th</sup>  
Thurs., Sept. 21<sup>st</sup> | Viruses (Ch. 2)  
Viruses (Ch. 6) |
| 5    | Tues., Sept. 26<sup>th</sup>  
Thurs., Sept. 28<sup>th</sup> | Bacteria (Ch. 3)  
Exam 1 |
| 6    | Tues., Oct., 3<sup>rd</sup>  
Thurs., Oct., 5<sup>th</sup> | Bacteria (Ch. 3)  
Bacteria (Ch. 3) |
| 7    | Tues., Oct. 10<sup>th</sup>  
Thurs., Oct. 12<sup>th</sup> | Archaea (Ch. 4, 20)  
Archaea (Ch. 4, 20) |
| 8    | Tues., Oct. 17<sup>th</sup>  
Thurs., Oct. 19<sup>th</sup> | Growth (Ch. 7)  
Growth (CH. 7) |
| 9    | Tues., Oct., 24<sup>th</sup>  
Thurs., Oct. 26<sup>th</sup> | TBD  
Exam 2 |
| 10   | Tues., Oct. 31<sup>st</sup>  
Thurs., Nov. 2<sup>nd</sup> | Physical/Chemical Control (Ch. 8)  
Physical/Chemical Control (Ch. 8) |
| 11   | Tues., Nov. 7<sup>th</sup>  
Thurs., Nov. 9<sup>th</sup> | Physical/Chemical Control (Ch. 8)  
Antimicrobial Chemotherapy (Ch. 9) |
| 12   | Tues., Nov. 14<sup>th</sup>  
Thurs., Nov. 16<sup>th</sup> | Antimicrobial Chemotherapy (Ch. 9)  
Antimicrobial Chemotherapy (Ch. 9) |
| 13   | Tues., Nov. 21<sup>st</sup>  
Thurs., Nov. 23<sup>rd</sup> | THANKSGIVING HOLIDAYS |
| 14   | Tues., Nov. 28<sup>th</sup>  
Thurs., Nov. 30<sup>th</sup> | Microbial Genetics  
Exam 3 |
| 15   | Tues., Dec. 5<sup>th</sup>  
Thurs., Dec. 7<sup>th</sup> | Microbial Genetics  
Review |
| 16   | Tues., Dec. 12<sup>th</sup>  
10:30 am | FINAL  
EXAMINATION |

**NOTE:** Slight variations from the proposed calendar are possible during the course.

Exam dates will not be changed unless the school is closed for a catastrophic reason . . . think hurricane, flood, snowpocolypse, etc. Mark these dates on your calendar NOW.

**Tuesday, December 5<sup>th</sup>** is the last day to drop a class without a W for the semester.
MATERIALS

PowerPoint presentations for each lecture will be uploaded in Brightspace (D2L) according to the provided schedule for the course so that students can follow the material and take notes more easily. These are NOT intended to replace attendance. PowerPoint slides are an outline of the topics discussed . . . attendance is required for understanding.

The required textbook for the course is Prescott’s Microbiology, 11th or 12th ed., Willey, et al; McGraw-Hill Education, 2019 or 2023. You may use whatever version you prefer – online, loose leaf, or print. The SFA Barnes and Noble bookstore carries this text but it is also available directly from McGraw-Hill and at other retailers such as Amazon.

![Prescott's Microbiology](image1.jpg)

11th Ed. ISBN: 1260211886

![Prescott's Microbiology](image2.jpg)

12th Ed. ISBN: 1265123039

COURSE GOALS AND STUDENT LEARNING OUTCOMES

This course is designed to be introductory in nature and will cover broad concepts in microbiology including bacteria, protozoans, parasites, viruses and fungi. Because prerequisites for this course include Biology for Majors I and II, as well as one semester of chemistry, basics concepts in these fields will be only briefly covered while passing on to other areas of concentration. There will be some memorization required out of necessity but only enough to “learn the players involved” and allow you to apply facts to building concepts and a fuller understanding of this rapidly advancing field of science.

Student Learning Outcomes (Course Competencies): Knowledge and Understanding

The student’s understanding will be evaluated with comprehensive exams with both objective and subjective components covering each topic in detail. Students who successfully complete Microbiology will demonstrate:

- The ability to identify the role of microorganisms in human history and health;
- An understanding of the importance and roles of microorganisms within the biosphere;
- An understanding of prokaryotic cell morphology and function;
- An understanding of nutritional and environmental influences on cell growth and control of cell growth;
• An understanding of energy flow and basic metabolic processes within the cell;
• An understanding of both molecular and microbial genetics and mobile genetic elements;
• A basic understanding of recombinant DNA technology;
• An understanding of the binomial classification system used in microbiology and the ability to identify significant species;
• An understanding of the taxonomic descriptions and distinctions of eukaryotic microorganisms;
• A basic understanding of the distinctions and peculiarities of the viruses.

Program Learning Outcomes:

Each of the students learning outcomes listed above address the Biology Department Program Learning Outcome #1: Demonstrate a good knowledge base in biological concepts and be able to integrate knowledge with critical thinking skills to become problem solvers. Knowledge base will include: levels of complexity (molecule/cellular through population/communities/ecosystems); biological principles and processes.

GRADING POLICY

During this course students will be assessed by: 900 point total

• 6 quizzes or assignments (top 5 scores will be used)- 5 x 20 = 100 points (11.11% of the course grade)
• 3 exams- 3 x 100 = 300 points (33.33% of the course grade)
• 1 comprehensive final exam – 1 x 200 points (22.22% of the course grade)
• Microbiology lab grade* – 300 points (33.33% of the course grade)
  o *NOTE: You MUST pass the lab portion with a 60% (180 points) or better to pass the course. For example, you could have high A’s on all the quizzes and exams, but if you fail lab, you fail the course!

Bonus points will be assigned to each student according to the level of attendance in class, bonus questions on tests and optional class assignments (up to 30 points).

Missed assessments

Quizzes and assignments will be given online via D2L. You are allowed to miss 1 quiz without penalty as only the top 5 grades are counted.

One missed exam may be substituted with the same grade as the final exam grade ONLY if an appropriate SFA approved excuse is provided.

Late assignment submission policy

Since feedback for quizzes will be provided immediately and bonus opportunities are voluntary, late submissions will not be accepted.
Grading Scale

<table>
<thead>
<tr>
<th>Grade Letter</th>
<th>Points Range</th>
<th>Percentage Range</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>810+ points</td>
<td>(90 – 100%)</td>
</tr>
<tr>
<td>B</td>
<td>720 – 809 points</td>
<td>(80 – 89.99%)</td>
</tr>
<tr>
<td>C</td>
<td>630 – 719 points</td>
<td>(70 – 79.99%)</td>
</tr>
<tr>
<td>D</td>
<td>540 – 629 points</td>
<td>(60 – 69.99%)</td>
</tr>
<tr>
<td>F*</td>
<td>0 – 539 points</td>
<td>(0 – 59.99%)</td>
</tr>
</tbody>
</table>

*Again, you MUST pass the lab portion with a 60% (180 points) or better to pass the course. Failing the lab portion of the course means you automatically fail the course, no matter your lecture portion grade!

Attendance is mandatory. Roll will be taken every class. This is not one of those courses where you can look at the PowerPoints, scan the textbook and hope to wing it on the exams without attending class. This is science! It’s tough stuff! I think this subject is fun, fascinating, super relevant to what we’re living through every day and totally amazing so I will make it as user friendly as I possibly can. You must do your part and be in class on time every day and keep up with the material. You and I both want you to be happy with your grade at the end. I have no sympathy for whiners at the end begging for help when I’ve hardly seen your face all semester.

AARC SERVICES

The Academic Assistance and Resource Center (AARC) provides tutoring in microbiology! I highly recommend taking advantage of this free service! Tutors have taken this course and know how to help you be successful. AARC is located on the first floor of the Steen Library. Check it out in person or online.

COURSE CREDIT HOUR JUSTIFICATION

This is a 3 credit hour course (without the required lab component), which means that students will have 150 minutes of direct instruction per week. This includes traditional lecture delivery, active and flipped learning activities, and assessments. In addition, around 4 hours per week of out-of-class activities is expected from students in order to successfully accomplish all course requirements. This includes preparation for classes, review of literature or class material, work on out-of-class assignments, etc.

COVID and FLU RECOMMENDATIONS

Although we are post-pandemic, COVID, flu, colds, and other pathogenic microorganisms are prevalent in our environment. Application of all recommendations related to control of COVID, FLU, colds, etc. issued by CDC, including vaccination, physical distancing, wearing of face coverings, and hand washing is strongly encouraged but not required.
Academic Integrity (4.1)

The Code of Student Conduct and Academic Integrity outlines the prohibited conduct by any student enrolled in a course at SFA. It is the responsibility of all members of all faculty, staff, and students to adhere to and uphold this policy.

Articles IV, VI, and VII of the new Code of Student Conduct and Academic Integrity outline the violations and procedures concerning academic conduct, including cheating, plagiarism, collusion, and misrepresentation. **Cheating** includes, but is not limited to: (1) Copying from the test paper (or other assignment) of another student, (2) Possession and/or use during a test of materials that are not authorized by the person giving the test, (3) Using, obtaining, or attempting to obtain by any means the whole or any part of a non-administered test, test key, homework solution, or computer program, or using a test that has been administered in prior classes or semesters without permission of the Faculty member, (4) Substituting for another person, or permitting another person to substitute for one’s self, to take a test, (5) Falsifying research data, laboratory reports, and/or other records or academic work offered for credit, (6) Using any sort of unauthorized resources or technology in completion of educational activities. This includes Artificial Intelligence resources like ChatGPT and the like.

**In this course NO Artificial Intelligence resources may be used in any way. All work must be your own. Any resources used in your preparing your work must be clearly cited.**

**Plagiarism** is the appropriation of material that is attributable in whole or in part to another source or the use of one’s own previous work in another context without citing that it was used previously, without any indication of the original source, including words, ideas, illustrations, structure, computer code, and other expression or media, and presenting that material as one’s own academic work being offered for credit or in conjunction with a program course or degree requirements.

**Collusion** is the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any provision of the rules on academic dishonesty, including disclosing and/or distributing the contents of an exam.

**Misrepresentation** is providing false grades or résumés; providing false or misleading information in an effort to receive a postponement or an extension on a test, quiz, or other assignment for the purpose of obtaining an academic or financial benefit for oneself or another individual or to injure another student academically or financially.

**Withheld Grades Semester Grades Policy (5.5)**

Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the coursework because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH
will automatically become an F and will be counted as a repeated course to compute the grade point average. For additional information, go to https://www.sfasu.edu/policies/course-grades-5.5.pdf.

**Students with Disabilities**

To obtain disability-related accommodations, alternate formats, and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services promptly may delay your accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices/.

**Student Wellness and Well-Being**

SFA values students’ overall well-being, mental health and the role it plays in academic and overall student success. Students may experience stressors that can impact both their academic experience and their personal well-being. These may include academic pressure and challenges associated with relationships, emotional well-being, alcohol and other drugs, identities, finances, etc.

If you are experiencing concerns, seeking help, SFA provides a variety of resources to support students’ mental health and wellness. Many of these resources are free, and all of them are confidential.

**On-campus Resources:**

The Dean of Students Office (Rusk Building, 3rd floor lobby) www.sfasu.edu/deanofstudents

936.468.7249 dos@sfasu.edu

SFA Human Services Counseling Clinic Human Services, Room 202

www.sfasu.edu/humanservices/139.asp

936.468.1041

The Health and Wellness Hub “The Hub”

Location: corner of E. College and Raguet St.

To support the health and well-being of every Lumberjack, the Health and Wellness Hub offers comprehensive services that treat the whole person – mind, body and spirit. Services include:

- Health Services
- Counseling Services
· Student Outreach and Support
· Food Pantry
· Wellness Coaching
· Alcohol and Other Drug Education www.sfasu.edu/thehub
936.468.4008
thehub@sfasu.edu

Crisis Resources:
· Burke 24-hour crisis line: 1.800.392.8343
· National Suicide Crisis Prevention: 9-8-8
· Suicide Prevention Lifeline: 1.800.273.TALK (8255)
· jobCrisis Text Line: Text HELLO to 741-741