BIO 1005 – SECTION 003

Topics in Biology:
Parasites Among Us
Stepping Into the Microscopic World

FALL 2025

INSTRUCTOR INFORMATION:

Professor Smith, MS

EMAIL: asmith24@flsouthern.edu

OFFICE: Berry Citrus Science 306 (c306)

CALENDLY

OFFICE HOURS:

Monday / Wednesday / Friday	9:00am – 10:00am
Tuesday / Thursday	12:00pm – 1:00pm

All office hours are held in Citrus c306, you are welcome to select date/time through Calendly prior but it is not a requirement for office hours.
If you cannot attend these times, please reach out to me via email to schedule a time that works best for both of us to meet.

COURSE DESCRIPTION:

General:
Four hours. Does not count toward major or minor. This course focuses on how biological concepts impact our daily lives. Emphasis is placed on how science is done and the applications of science to individuals and to society. The specific topics are at the discretion of the instructor. The course may be repeated for credit with a different topic.

Parasites Among Us Specific:
Fundamental principles of microbiology for non-biology majors. Includes discussions on different pathogenic organisms (bacteria) and non-organisms (prions, viruses) covering several major outbreaks.

WRIGHT FOUNDATIONS PROGRAM:

This course fulfills 4 credit hours of the T: Technology, Math, and Natural Science: Understanding the Natural World and Quantitative Thinking requirement of the WRIGHT Foundations.

Natural Science Program Outcome: Students will engage in scientific inquiry and examine empirical evidence to explore the natural world.

- Students will use appropriate terminology to demonstrate STEM literacy.
- Students will explore important elements of scientific inquiry.
- Students will interpret data organized in different formats (e.g. tables or graphs).

COURSE LEARNING OUTCOMES:

By the end of this course students should be able to:

- Complete a scientific literature search for a research assignment.
- Understand how to properly use APA 7th edition citation style.
- Understand the basics of microbe metabolism, genetics, biochemistry, and growth.
- Describe differences between bacteria, viruses, and prions as infectious agents.
- Describe the basics of innate versus acquired immunology.
- Understand that microbes have a large impact on our lives and that not all the impacts are negative.

COURSE MATERIAL PROVIDED:

1. PowerPoints: All PowerPoints which are used in our lectures will also be available to students so they can follow along and take notes.

2. Class Reading Materials: There are no required textbooks, though there is a suggested text which can be purchased through the bookstore for this course section, any reading materials which are required will be linked to/posted within the canvas course.

3. Videos/Animations: Any videos or animations (aside from the ones shown in lectures) that Professor Smith requires students to view prior to class or as an addition to content covered in lecture will be in the appropriate canvas module.

COURSE ASSESSMENTS:

1. ASSESSMENTS

Students will have 4 assessments to complete throughout the semester. All assessments will be taken in person unless otherwise specified.
There will be no technically comprehensive assessments, but Biology does build upon itself so prior learned knowledge will be helpful with later topics.
Students will be permitted to use notebooks given out by Prof. Smith as their "cheat sheets" for each assessment. Prof. Smith will check the notebooks prior to the assessments being taken to ensure the work recorded within the notebook is the students' own work.

Any use of generative AI, plagiarism, or other form of cheating will result in a "0" for the assignment.

2. HOMEWORK ACTIVITIES

Students will have several assignments to complete at home throughout the course. Students will be informed of how to complete the assignments as well as their due dates throughout the semester. Most (if not all) of the homework activities will be completed through or uploaded to Canvas for grading.

Any use of generative AI, plagiarism, or other form of cheating will result in a "0" for the assignment.

3. IN-CLASS ACTIVITIES

Students will complete several in-class activities that will vary between individual and group work as well as what the structure of the assignments will be. All assignments will be explained the week / day they will be completed. If a student is absent and has a valid excuse they will be permitted to make up the activity on their own and submit it to Prof. Smith.

Any use of generative AI, plagiarism, or other form of cheating will result in a "0" for the assignment.

4. FINAL PROJECT

Students will submit a project (digital poster, research paper, video essay, or PowerPoint (recorded presentation or just slides are both accepted)) covering how microbes (prokaryotes, microscopic eukaryotes, viruses, or prions) play a role in their life. The question is broad on purpose, but students will be expected to choose a specific topic which fits within the broader subject given. Students will be given a detailed rubric and guidelines for the project.
Students will need to include an **annotated bibliography using a minimum of 5 scientific sources** which relate to their chosen topic. The full references will need to be structured in APA 7th edition formatting.
This project will be graded out of 100 points.

Any use of generative AI, plagiarism, or other form of cheating will result in a "0" for the assignment.

TOTAL ASSIGNMENT GRADE ALLOTMENT:

Assignment and Amount	Percent of Grade
Assessments	45%
Homework Activities	15%
In-Class Activities	15%
Final Project	25%

GRADING SCALE:

Letter Grade	Percent out of 100
A	≥ 90
B	80 – 89
C	70 – 79
D	60 – 69
F	≤ 59

IMPORTANT DATES:

Classes Begin	08/26
Drop / Add Deadline	09/01
Fall Break	10/20 – 10/24
Withdrawal Deadline	11/07
Thanksgiving Break	11/26 – 11/28
Finals Week	12/15 – 12/17

MODULE BREAKDOWN:

Topic	Module	Dates
Syllabus, Introductions, and Q&A/ Introduction to Scientific Literature Search	First Week	08/27
Microbes All Around Us	First Week	08/29
Introduction to Microbiology	1	09/01 - 09/03
Biochemistry Basics	1	09/05 - 09/10
Introduction to Prokaryotic cells	1	09/12 - 09/17
Basics of Genetics	1	09/19 - 09/24
Assessment 1	1	***09/26***
Fundamentals of Microbial Growth and Microbial Metabolism	2	09/29 - 10/01
Principles of Infectious Disease and Epidemiology	2	10/03 - 10/06
Innate and Adaptive Immunity	2	10/08 - 10/13
Assessment 2	2	***10/15***
Microbe and Human Interactions	3	10/27 - 10/31
Pathogenic Bacteria	3	11/3 - 11/12
Assessment 3	3	***11/14***
Introduction to Viruses	4	11/17 - 11/21
Pathogenic Viruses	4	12/1 - 12/8
Prions	4	12/10 - 12/12
Assessment 4	4	***12/15*****, 3:15pm**

POLICIES

The following pages contain important information on policies related to the course, to the Biology Department, and Florida Southern College.
It is your responsibility to be aware of these policies.

COURSE POLICIES:

STATEMENT OF ENGAGED LEARNING:

Engaged learning is an approach to teaching and learning in which **students are responsible for developing the skills, attitudes, and knowledge necessary for success in life**. The role of the professor is to empower students to achieve these outcomes. The engaged learning method of teaching encourages learners to conduct meaningful inquiries, reflect, think critically, and develop learning strategies for dealing with real-world challenges. Engaged learning may take place in a variety of settings using approaches varying in complexity and tailored to diverse learning styles.

STATEMENT OF TECHNOLOGY IN THE CLASSROOM:

Students in the course may experience and use technology in the form of:

- PowerPoint and other presentation software
- Online research using the internet and/or discipline-specific databases
- Online videos and animations
- Canvas and other digital learning platforms

STATEMENT OF GENERATIVE AI USAGE:

Throughout your college experience, you are provided with a variety of scholarly resources to better understand your field of interest, foster your critical thinking skills, and help you prepare for life as a successful professional. Taking advantage of these educational opportunities is crucial for your personal and professional development. It is also hard. Becoming a successful professional takes a lot of hard work, including being able to write original thoughts, spending time practicing your knowledge and skills, and consistently challenging yourself to improve your understanding of a given topic.

Generative artificial intelligence (GAI) tools, such as ChatGPT, can be useful for helping you accomplish certain tasks, like brainstorming ideas or managing your time. However, they should NEVER serve as a substitute for your own independent thinking, understanding of content, or creativity. As such, **you are NOT allowed to include material generated by an AI program on any assignments in this course without permission from your instructor, unless specifically allowed by the assignment instructions. Your instructor reserves the right to request an oral explanation of answers at any time.**

We treat any AI-based assistance the same way we treat collaboration with other people: you are welcome to talk about your ideas and work with other people, both inside and outside the class, as well as with AI-based assistants. However, all work you submit must be your own. You should never include anything in your

assignment that was not written directly by you without proper citation (including quotation marks and in-line citation for direct quotes). **Any plagiarism or other form of cheating, such as using GAI tools to generate answers for course assignments, will be treated as an academic misconduct case and dealt with under relevant FSC policies.**
Think of the help you get from GAI tools as a much less sophisticated version of the assistance you can receive (for free!) from an Academic Fuel peer scholar or Writing Center coach here at Florida Southern College. That person might ask you a question to jump-start your imagination, provide examples to help you grasp a difficult concept, or identify a poorly organized paragraph, but should never do the writing for you. A major difference here, of course, is that a GAI tool is not a person, nor can it replace the value of a knowledgeable professional in your field. It is a machine that is adept at recognizing patterns and reflecting those patterns back at us. It cannot think for itself. And it cannot think for you.

ACCESS FOR STUDENTS WITH DISABILITIES FALL 2025:

Florida Southern College and Student Disability Services are committed to providing access and inclusion for students with documented disabilities to courses, facilities (including Residence Halls), and programs. Categories of disabilities could include, but would not be limited to, chronic health diagnoses, learning disabilities, and mental health conditions. If you anticipate or experience barriers to your college experience due to the impact of a disability, please notify the Office of Student Disability Services to discuss the eligibility process for establishing accommodations. You can reach FSC's Student Disability Services professionals, Asst. Dean for Student Support, Dr. Sandy Calvert by e-mail at disabilityservices@flsouthern.edu, in Carlisle Rogers Building or by telephone at (863) 680-4900. Our Student Disability Services professionals are available for both face-to-face and Zoom meetings by appointment.

For more information on disability accommodations and access, please visit our website at https://www.flsouthern.edu/campus-offices/offices-directory/office-of-student-disability-services

FLORIDA SOUTHERN COLLEGE HONOR CODE STATEMENT:

"I will practice academic and personal integrity and excellence of character

and expect the same from others."

As an academic community, Florida Southern College is firmly committed to honor and integrity in the pursuit of knowledge. Therefore, as members of this academic community, all students acknowledge responsibility for their actions and commit themselves to the highest standards of integrity, thereby making a covenant with the College and all members of the academic community not to engage in any form of academic dishonesty as defined immediately below. This covenant—Florida Southern College's Honor Code—lies at the heart of learning, inquiry, and the critical exploration and dissemination of ideas. Through it, students affirm the authorship of their own work, and when work is not their own, appropriately attribute ideas, concepts, data, words, and artistic and creative expressions. Formal subscription to the Honor Code by all students assures the academic community that breaches of academic integrity will not be tolerated and fosters learning at its best. (See the Academic Catalog for more details).

TITLE IX STATEMENT (JUST ASK):

Florida Southern College is committed to fostering a safe, productive learning environment. Title IX and Florida Southern College policy prohibits discrimination on the basis of sex. Sexual Misconduct – including harassment, domestic and dating violence, sexual assault, and stalking – is also prohibited at Florida Southern College.

Florida Southern College encourages anyone experiencing sexual misconduct to talk to someone about what happened, so they can get support they need, and an appropriate response can be initiated.

If you wish to speak confidentially about an incident of sexual misconduct, want more information about filing a report, or have questions about school policies and procedures, please visit the Florida Southern College website: **Just Ask for Students - Florida Southern College in Lakeland, FL (flsouthen.edu).**

Florida Southern College is legally obligated to investigate reports of sexual misconduct, and therefore the confidentiality of a report cannot be guaranteed, but requests for confidentiality will be considered and respected to the extent possible.

As a faculty member, I am required by Florida Southern College to report incidents of sexual misconduct and thus cannot guarantee confidentiality. If you contact me about any type of discrimination, I am obligated to provide our Title IX coordinator with relevant details such as the names of those involved in the incident.

BIOLOGY DEPARTMENT POLICIES:

The Biology Department is committed to making your educational experience the best possible.

ACADEMICS

1. Engaged Learning is a hallmark of FSC. The Biology Department embraces this model of learning, and to this end, we design our courses to include opportunities for students to be active participants in their learning. Whether through case studies, analysis of data and primary literature, laboratory and field work, discussions, group projects, use of computer simulations, or a myriad of other learning approaches, you will be afforded opportunities daily to actively participate in your own learning. This will help you develop your critical thinking and analytical skills, become proficient in techniques used by biologists, and hone your communication capabilities. It is the responsibility of the student to participate in all activities, which will sow the seed to success and to becoming life-long learners. Engaged learning does not always mean you will find a "right answer." Do not become frustrated when you encounter this situation. Instead, use your creativity to think of how to answer questions, and what the next questions are.

2. We encourage our students to develop self-reliance. Learning how to do things on your own is part of becoming an adult. Preparation for classes and extracurricular activities, taking initiative in your studies and your personal life and finding effective resources by exploring multiple options are necessary skills that will serve you well throughout life. You should ask for help but do so after pursuing other options and trying to find the answer on your own. You need to take responsibility to communicate with instructors as you would with an employer or supervisor.

3. Science advances rapidly, and memorization of facts is not an appropriate way to understand Biology. The best approach to embracing Biology as a discipline is to learn "the basics," but then to see how these concepts and techniques are being applied to investigate current relevant questions and problems. The faculty will also make you aware of new findings in the field.

4. We value our students' opinions, but the faculty is committed to helping students understand the scientific method and how science arrives at conclusions. If your personal beliefs about a topic cause you to reject the evidence that supports a concept, you still need to understand this evidence and why it is accepted within the scientific community.

5. Students often have difficulty wading through information in textbooks, but we want to assure you the choice of textbooks in courses is made deliberately and thoughtfully, to provide you with the best information possible. If you are having difficulty understanding the material as you read, we encourage you to try different approaches to active reading, consult other resources to help clarify concepts, and seek out your instructor to discuss sticky points. You have the ability to understand these materials, but you also need to commit to work at it. It will not always be easy, but in the end, it will be worth it

6. The full understanding of, appreciation for, and success in Biology courses requires the integration of many interdisciplinary skills, including:

    a. Clear and concise communication: You will find in your courses that oral and written communication will be major components of your grade. You must learn how to effectively communicate no matter what field or career you choose. We always encourage students to take courses outside of the natural sciences to hone these skills. You will also broaden your perspective and enhance your critical thinking skills when studying the Humanities and Social Sciences.

    b. Use of technology: You will use some common software programs (e.g. Excel, PowerPoint, word processing software, etc.) as well as discipline-specific databases and social networking sites. These will help you in your academics as well as in your future career. However, you are cautioned to use technology appropriately, and to be wary of the digital world as it is often a distraction.

c. Application of Ethics: Ethics applies to how science is done, but it also applies to your approach to your academics and your life.

   i. In the sciences we emphasize decreasing bias and upholding academic integrity. As scientists we work with other members of society to determine how best to implement technology and scientific advancements.

   ii. As a student, you must commit yourself to the highest level of integrity, and always do your own work. Not only is plagiarism and cheating dishonest, if you engage in this behavior, you will face consequences that include failure of the course and expulsion from the college.

   iii. Being part of a community of learners also means treating others with respect, finding ways to utilize different talents and perspectives within a group, and taking responsibility to help others when you can.

   iv. You must also take responsibility for your actions, including knowing when assignments are due, where to find information, communicating in a timely fashion with your peers and faculty, etc.

   v. Extra credit is rare, as you need to learn how to prepare, succeed, and meet the expectations that have been communicated to you. Depending on extra credit to succeed means you cannot succeed any other way. Do not rely on this as a crutch.

   vi. You also have a responsibility to yourself and others to minimize harm, both inside and outside of the classroom. This includes emotional harm (as with bullying and racial slurs), physical harm (as with sexual assault) and potential spread of disease (as with not wearing masks when warranted).

COMMUNICATION

1. Our courses and majors have been carefully designed based on the needs of our students, best practices at other institutions, and accreditation standards. We welcome and encourage discussions on how we can make the curriculum even better.

2. Your advisor is committed to helping you progress in your academics, find opportunities to realize your potential in extracurricular venues, and prepare appropriately for your journey after graduation, whether it be employment, graduate school or professional school.

3. It is ultimately the responsibility of the student to ensure they are meeting all requirements for graduation and to advance their career goals. There are many resources on campus to help students, but we cannot force students to take advantage of them.

4. The faculty strive to provide clear instructions in our syllabi, on Canvas, in our rubrics and assessment guidelines, etc. If you do not understand or have a question, please reach out before assignments are due, allowing enough time for you to adjust to anything necessary after clarification.

5. We provide as much information as possible for our students, through social media platforms (including the Biology Slack Site), our LMS (Canvas), our syllabi, the Health Professions and STEM Career Development Center, etc. These materials are for you, and you should take advantage of them.

6. Faculty will often communicate with students individually via text messaging and other platforms. We will always try to communicate in a respectful manner, but written words do not always convey the intended tone. Please be cognizant of this and confirm anything you may not be clear on. We expect students to also communicate respectfully

and effectively with us as well. Please understand we may not always be able to respond to your communication immediately and allow us adequate time to provide information to you. We also request you do not abuse this communication (for example, most of us are not awake at 2 AM, so a text message sent then will not be answered).

COMMUNITY AND VALUES:
The faculty in the Biology Department are committed to the following:

1. We are committed to ensuring that all individuals are treated equitably, with respect, dignity, and fairness. We will actively address discrimination, bias, and inequity wherever it occurs on our campus and in our community.

2. We uphold the rights of all individuals, regardless of race, gender identity, sexual orientation, nationality, and place of origin, to learn and work in an environment free from discrimination and harassment.

3. We commit to continuous professional development to foster a respectful, welcoming, and collaborative departmental culture.

4. As a faculty, we are committed to highlighting the contributions of scientists from a wide range of backgrounds, cultures, and experiences, ensuring our curriculum reflects the breadth of voices in the field. We will work to provide opportunities to our students to hear from an eclectic population of scientists.

5. We ensure equal access to research and internship opportunities for all students, while also connecting eligible students with additional external programs and resources designed to expand participation in STEM.

6. We are aware of the economic struggles some of our students face, and we will work to reduce economic burdens at the departmental level.

7. We promote a culture of compassion in our classrooms, labs, and in our student organizations. We actively strive to know our students as individuals so that all students can be comfortable and confident to seek help if necessary. We may not share all your experiences, but we will listen and do everything we can to help you be successful.

8. We stay true to the core principles of science as an unbiased and objective discipline that is grounded in evidence, rigorous methodology, and open inquiry. We strive to model these principles in all aspects of our teaching and research.

COMMUNICABLE DISEASE POLICIES

As scientists, the Biology faculty have an in-depth understanding of the pathogens that cause various diseases (such as COVID 19), how they infect the human body and how they spread, and the consequences of infection. We are committed to helping the entire community of FSC to be safe and reduce the risk of transmission of communicable diseases. We will enforce the college policies as published and encourage students to be aware of and implement healthy habits that will decrease the risk of contracting a pathogen and spreading it to others.
In light of the fact that some pathogens are highly infectious, and are likely to spread in a classroom setting, the department has the following recommendations:

1. Wear a face mask under the following circumstances:
   a. If you or someone you live with is immunocompromised or otherwise more vulnerable to communicable diseases.
   b. If you feel sick or have recently been sick
   c. If you are in close proximity to others for an extended period of time, as will occur if you are riding in a van to an off campus event.

d. If you are participating in a laboratory where masks are a normal part of the appropriate PPE (personal protective equipment) for that environment.

e. These recommendations may change as circumstances warrant.

2. Masks should be worn properly to cover both the nose and mouth,

3. Students should avoid touching their face. This includes touching masks, so students should wear masks that fit the face well, so they do not need to constantly adjust it.

4. Students are encouraged to wash their hands often for 20 seconds with soap and warm water. If there is no access to a sink, hand sanitizer containing at least 60% alcohol can be used.

5. If your faculty member has implemented a seating chart, please be sure to sit in your assigned seat. Should faculty determine the setting or activity places students and others at an increased risk, the faculty will determine appropriate alterations for the class, for the activities, and for any assessments. If you have any concerns regarding your safety, you must notify your faculty members immediately.

6. If any student cannot attend class in person, the faculty will work with the student to ensure they have access to information and will be able to participate in class assignments as much as possible. We will provide opportunities for students to keep up and not fall behind and to have an excellent educational experience.

7. It is the responsibility of the student to notify faculty when they feel ill and will miss classes. If the student sees a medical provider, a note should be given to the faculty to excuse the absence.

8. While we can control what goes on in the classroom, it is the ethical responsibility of students to maintain healthy habits outside of the classroom. Your behavior will impact others, for better or for worse. You can spread a pathogen to very vulnerable people even if you don't know you have been infected, or you don't have any symptoms. Be aware of who you have been in contact with that may be ill and monitor how you feel every day. Even a slight change could indicate you are coming down with an illness.