

**Instructor:** Dr. Tracy Stepien

**Office:** 318 Little Hall

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**Web Site:** <https://people.clas.ufl.edu/tstepien/>

**Office Hours:**

- Mondays Period 7 (1:55pm–2:45pm)
- Wednesdays Period 8 (3:00pm–3:50pm)
- Thursdays Period 3 (9:35am–10:25am)
- By appointment

**Lecture Time and Place:** Mondays, Wednesdays, and Fridays  
Period 6 (12:50pm–1:40pm)  
217 Little Hall

**Textbook:** There is no required textbook. Readings will be posted on the course web site.

**Course Description and Goals:** MAP 4484/5489 is an introduction to modeling methods used in mathematical biology. It is neither a traditional biology nor mathematics course. No knowledge of biology and only basic knowledge in differential equations and linear algebra is required.

At the end of the course, students will be expected to demonstrate elementary competence in the terminology, concepts, and methodologies used within the discipline of mathematical biology. Students will learn to formulate, analyze, and simulate various models of biological systems.

**Prerequisites:** A grade of C or better in MAP 2302 and (MAS 3114 or MAS 4105).

**Course Web Site:** All course materials and information will be accessible through **Canvas**: <http://elearning.ufl.edu/>. Canvas will also serve as our course gradebook. Please verify the accuracy of all assignment and exam scores in a timely fashion.

**Tentative Schedule:**

Weeks 1–2 (Jan. 6–17)	Review of ODEs; Introduction to modeling
Weeks 3–4 (Jan. 20–31)	Population growth; Cancer modeling
Weeks 5–6 (Feb. 3–14)	Competition; Predator-prey models
Weeks 7–8 (Feb. 17–28)	Infectious diseases; SIR models
Weeks 9–10 (Mar. 9–20)	Neuroscience
Weeks 11–12 (Mar. 23–Apr. 3)	Circulatory system
Weeks 13–14 (Apr. 6–17)	Introduction to PDEs and reaction–diffusion models
Week 15 (Apr. 20–22)	Project presentations

**Homework:** Written homework assignments showing all work with proper notation will be due bi-weekly via electronic submission through Canvas.

*Late submissions will receive a point deduction of 10% per day late.* Note that late days are counted in 24-hour periods. For example, if the cutoff for on-time submission is 11:59pm, submitting between 12:00am–11:59pm the next day is one day late, and so on. Every assignment has a hard deadline, usually 2 days past the original due date, and late submissions (penalty or not) are *not accepted after the hard deadline*.

*No homework scores will be dropped at the end of the semester.*

**Project:** During the second half of the semester, you will have the opportunity to work as part of a team on a project. (Students enrolled in MAP 5489 will work on their own.) The instructor will suggest topics, but you are welcome to propose others that interest you. In any case, the final topic and scope of work will be negotiated with the instructor well in advance.

Your team will give an oral presentation during the last week of class (April 20 or 22) and write a 5–10 page paper (due on April 22).

**Exams:** There will be **one in-class midterm exam** tentatively scheduled for

- **Friday, February 28**

and a **final exam** scheduled for

- **Wednesday, April 29 from 12:30pm–2:30pm**

in the regular classroom.

In general, there will be *no make-up exams* in the course. However, in complex and unusual circumstances which are beyond your control, a make-up exam may be given on a case-by-case basis. This will require providing a detailed account of the situation and supporting documents. The instructor must be notified as soon as possible, preferably **before** the exam is given with as much advanced notice as possible.

*There are no exam retakes or corrections, no lowest exam will be dropped, and there will be no extra credit assignments to erase the consequences of a bad exam score.*

**Grades:** The semester grade will be computed based on:

- Final Exam: 30%
- Midterm Exam: 30%
- Homework: 20%
- Project: 20%

Your final course grade will be no lower than the following:

A	= [93, 100]	B+	= [87, 90)	C+	= [76, 80)	D	= [60, 70)
A-	= [90, 93)	B	= [83, 87)	C	= [70, 76)	E	= [0, 60)
		B-	= [80, 83)				

Grades are based only on academic work and are calculated using the same criteria for all students. It is unethical to bring to your instructor's attention the possible impact of your mathematics grade on your future plans, including graduation, scholarships, jobs, etc.

More information on UF grading policies (including requests for withdrawal (W) or incomplete (I\*/I) grades) may be found at:

- <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

### Academic Calendar Dates:

- **Monday, January 6:** First day of class
- **Friday, January 10:** Last day to drop/add courses with no fee liability
- **Monday, January 20:** No Classes (Martin Luther King Jr. Day)
- **Monday, March 2–Friday, March 6:** No Classes (Spring Break)
- **Friday, April 10:** Last day to withdraw from courses with W
- **Wednesday, April 22:** Last day to petition to your college for late withdrawal
- **Wednesday, April 22:** Last day of class

**Attendance:** Requirements for class attendance in this course are consistent with university policies that can be found at

- <http://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>

Please see the above web site for more information on religious holidays, illness policy, and the 12-day rule for university-sponsored athletic or scholarly activities.

Participating in the course and attending lectures and other course events are vital to the learning process. Furthermore, a huge part of the transition into your professional careers is being where you are supposed to be when you are supposed to be there. As such, your attendance is expected at every lecture. Students may be administratively dropped from the course for lack of attendance; however, students should be aware that nonattendance does not automatically result in being dropped from the course.

**Classroom Behavior:** To foster a positive learning environment, students and instructors have a shared responsibility. We want a safe, welcoming, and inclusive environment where all of us feel comfortable with each other and where we can challenge ourselves to succeed. To that end, our focus is on the tasks at hand and not on extraneous activities (texting, chatting, reading a newspaper, making phone calls, web surfing, taking photos, etc.).

The use of personal electronics such as laptops, tablets, cell phones, cameras, and other such mobile devices is distracting to the other students and the instructor. Their use can degrade the learning environment. Therefore, students are not permitted to use these devices during the class period.

**Honesty Policy Regarding Cheating, Plagiarism, etc.:** UF students are bound by *The Honor Pledge* (<http://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>) which states,

We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. 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.”

The Student Conduct Code (<http://sccr.dso.ufl.edu/process/student-conduct-code/>) specifies a number of behaviors that are in violation of the honor code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please or consult with the instructor in this class.

**Accessibility and Accommodations:** Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs as early as possible in the semester.

**Online Course Evaluations:** 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 <http://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <http://gatorevals.aa.ufl.edu/public-results/>.

### Health and Wellness Resources:

- *U Matter, We Care:* If you or someone you know is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu), 352-392-1575, or visit <http://umatter.ufl.edu/> to refer or report a concern and a team member will reach out to the student in distress.
- *Counseling and Wellness Center:* Visit <http://counseling.ufl.edu/> or call 352-392-1575 for information on crisis services as well as non-crisis services.
- *Student Health Care Center:* Call 352-392-1161 for 24/7 information to help you find the care you need, or visit <http://shcc.ufl.edu/>.
- *University Police Department:* Visit <http://police.ufl.edu/> or call 352-392-1111 (or 9-1-1 for emergencies).
- *UF Health Shands Emergency Room/Trauma Center:* For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Rd., Gainesville, <http://ufhealth.org/emergency-room-trauma-center/>.

### Academic Resources:

- *Teaching Center:* Obtain drop-in or appointment tutoring, join a Supplemental Instruction (SI) study group, and take study skills workshops at the ground level of Broward Hall; see <http://teachingcenter.ufl.edu/>
- *E-learning technical support:* Contact the UF Computing Help Desk at 352-392-4357 or via e-mail at [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu).

- *Career Connections Center:* Career assistance and counseling services at Reitz Union, Suite 1300, <http://career.ufl.edu/>.
- *Library Support:* Ask a librarian for help using the libraries or finding resources through various methods at <http://cms.uflib.ufl.edu/ask>

**Important Note:** Information contained in the course syllabus, other than the grade and absence policy, may be subject to change with advance notice, as deemed appropriate by the instructor.