

SYLLABUS

MATH 420-01: Introduction to Mathematical Biology

Spring 2021

INSTRUCTOR INFORMATION

Instructor:	Raj Dahal, Ph.D
Office:	SCI 205B
Telephone:	843-349-2391
E-mail:	rdahal@coastal.edu
Office Hours:	MTWThF: 1:00–1:50 PM and <i>by appointment</i>
Course webpage:	ww2.coastal.edu/rdahal/math420
Class schedule:	TBA

COURSE DESCRIPTION

Textbook: *An Introduction to Mathematical Biology* by Linda J.S. Allen
ISBN-13: 978-0130352163

Prerequisite: Math 320 with a minimum grade of “C” or equivalent

Course Description: *Introduction to mathematical modeling techniques in the biological sciences; includes continuous versus discrete models; deterministic versus stochastic models; population dynamics and ecology; includes Lotka-Volterra equations, spread of infectious diseases. No prior background in biology is necessary.*

Course Objectives: Successful students in this course will be able to understand and solve discrete and continuous models of biological phenomena, understand biological models published in research papers, and develop and solve biological models given descriptions of biological systems.

Homework: Homework problems will be assigned regularly and are collected for grading.

Tests: There will be three major exams. The exam dates will be provided in class.

Projects: There will be four projects assigned in this course. Details will be provided in the class.

Homework: You are encouraged to form study groups to work on the problems. However, you are expected to individually write up your solutions, and you are responsible for your own understanding of the material. Absolutely no late homework will be accepted.

Matlab: A basic knowledge of Matlab is required. Any student who has taken Math 242 or equivalent is qualified.

Calculator: No calculator of level TI 89 or higher is allowed for any exams or quizzes. If you have questions about your calculator please let me know. Absolutely no cell phones are allowed in class at any time.

Grade Guidelines: Projects = 20%, Homework = 20%, 3 Exams = 60%

Grade Scale:	A: 90–100	B+: 86–89	B: 80–85	C+: 76–79
	C: 70–75	D+: 66–69	D: 60–65	F: below 60

Important Dates:

Monday, January 18	MLK holiday
March 8–March 12	Spring Break
Wednesday, March 24	Last day to drop with a grade of “W”
Friday, April 2	Student Holiday
Wednesday, April 28	Last day of classes

Student Learning Outcomes: *By the end of the semester, the successful student will be able to: in Math 420 will have obtained facility in understanding, developing, and solving a variety of mathematical models of problems involving integrals, infinite series, and differential equations. More specifically, students will be able to:*

- 1. solve linear and nonlinear difference and differential equations*
- 2. read, understand, and solve discrete and continuous models of biological systems*
- 3. create models given biological data, solve the model and interpret it.*

Students with Disabilities: *Any student with a documented disability needing academic adjustments or accommodations is requested to speak with me during the first week of class. All discussions will remain confidential.*

Statement of Student Conduct: *Coastal Carolina University is an academic community that expects the highest standards of honesty, integrity and personal responsibility. Members of this community are accountable for their actions and reporting the inappropriate action of others and are committed to creating an atmosphere of mutual respect and trust.*

Attendance Policy: *See here: <http://www.coastal.edu/policies/pdf/acad-125classattendance.pdf>*

The syllabus is for planning purpose only and is subject to change anytime.