EN 250 WS Fall 2023
Quantitative Biology
Team and Text

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Reference: "*Mathematical Biology*" by J D Murray

Course Learning Outcomes

After successful completion of this course, students will be able to:
-   Describe physical reality in mathematical terms in a way that transfers to improved performance in engineering science classes. In particular, students will be able to derive, analyze and apply models within the frameworks of continuous and discrete dynamical systems and simple stochastic models.
-   Use traditional mathematical tools in concert with qualitative and computer simulation methods to analyze, parameterize and apply mathematical models.
-   Employ the conservation law principle for derivation discrete and continuous mathematical models.

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Calendar

Week	Topics
Week 1	Dynamic Modeling with Difference Equations, HW#1
Week 2	Linear Models of Structured Populations, HW#2
Week 3	Nonlinear Models of Interactions, HW#3
Week 4	HW#4
Week 5	Quiz 1 Review (October 2) and Quiz 1 (October 4)
Week 6	Modeling Molecular Evolution, HW#5
Week 7	Constructing Phylogenetic Trees, HW#6
Week 8	Genetics, HW#7
Week 9	Quiz 2 Review (October 30) and Quiz 2 (November 1)
Week 10	Infectious Disease Modeling, HW#8
Week 11	Curve Fitting and Biological Modeling, HW#9
Week 12	HW#10
Week 13	Quiz 3 Review (November 27) and Quiz 3 (November 29)
Week 14	Project
Week 15	Project Due (December 8)

HWs due on Mondays starting September 11
Quizzes – October 4, November 1, November 29
Meetings at 4 PM on September 1 (Friday), October 2 (Monday), October 30 (Monday), November 27 (Monday)

Please refer to the syllabus template for more general institute specific guidelines/policies