

Tentative Schedule of Topics and Examinations

Date		Topic
W	Jan 20	A problem from microbial genetics: bacterial resistance
F	Jan 22	Modeling bacterial growth: discrete approach
M	Jan 25	Logistic difference equation
W	Jan 27	Numerical analysis of the logistic equation: Introduction to MATLAB
F	Jan 29	Qualitative analysis of the logistic difference equation: cobweb analysis
M	Feb 1	Equilibrium points and stability
W	Feb 3	Principle of linearized stability
F	Feb 5	Oscillations and chaos
M	Feb 8	Modeling bacterial growth: continuous approach
W	Feb 10	Exponential growth
F	Feb 12	Logistic growth: Qualitative Analysis
M	Feb 15	Existence, uniqueness and long term behavior of solutions
W	Feb 17	Review
F	Feb 19	Exam 1
M	Feb 22	Examples: Linear first order models
W	Feb 24	Principle of linearized stability
F	Feb 26	Qualitative analysis: equilibrium points, stability and linearized stability
M	Mar 1	Solving the logistic equation
W	Mar 3	Solving the logistic equation (continued)
F	Mar 5	Random variables and distributions
M	Mar 8	Probability distributions in genetics
W	Mar 10	Probability distributions in genetics (continued)
F	Mar 12	Probabilistic models
M	Mar 15	<i>Spring Recess</i>
W	Mar 17	<i>Spring Recess</i>
F	Mar 19	<i>Spring Recess</i>
M	Mar 22	Probabilistic models (continued)
W	Mar 24	Random Processes
F	Mar 26	<i>Cesar Chavez Day</i> (observed)
M	Mar 29	The Poisson process
W	Mar 31	Review
F	Apr 2	Exam 2
M	Apr 5	The Poisson process (continued)
W	Apr 7	Goodness of fit
F	Apr 9	Goodness of fit (continued)

Date	Topic
M Apr 12	Modeling the development of resistance
W Apr 14	Modeling the development of resistance (continued)
F Apr 16	Modeling the development of resistance (continued)
M Apr 19	The Luria-Delbrück experiment: average number of resistant bacteria
W Apr 21	The Luria-Delbrück distribution
F Apr 23	The Luria-Delbrück distribution: Goodness of fit
M Apr 26	Problems and examples
W Apr 28	Review
F Apr 30	Exam 3
M May 3	Review
W May 5	Review
Tu May 11	Final Examination