MATH 135, Spring 2019: *Mathematics for Life Sciences*

Time & Place TuTh 9:30–10:45am in ARM 0126

Instructor Dr. T. von Petersdorff, office MTH 4409, e-mail tvp@math.umd.edu, office hours Wed 12-2 (or by appointment)

Textbook E. N. Bodine: "*Mathematics for Life Sciences*", Princeton University Press, 2014.

Topics Corresponding sections in the textbook are given in parentheses.

Descriptive Statistics (Ch. 1–4): basics, visual display of data, linear regression, exponential and logarithmic functions

Discrete Time Modeling (Ch. 5–9): sequences, difference equations, vectors and matrices, long-term dynamics, equilibrium, eigenvalues

Probability (Ch. 10–14): probability of events and compound events, conditional probability, sequential events, population genetics models

Homeworks Homework problems from the textbook are listed on the ELMS course page. They will not be collected or graded. But you should do the homework problems to prepare for quizzes and exams.

Grading Policy The grade will be obtained from a weighted average of quizzes, projects, midterm exams, and final exam. With a total percentage $\geq 90\%, 80\%, 70\%, 60\%$ you are guaranteed an A, B, C, D, respectively. These cutoffs may be lowered slightly.

Quizzes (7.5%) In Math discussion sessions (Monday) there will be a 10 minute quiz about the sections covered in the previous week. The questions will be similar to the assigned homework. The lowest quiz will be dropped.

Projects (7.5%) In Biology discussion sessions (Wednesday) there will be a worksheet/groupwork/project which will be graded. The lowest score will be dropped.

3 Midterm Exams (Total 50%) The midterm exams will be on **Feb. 28**, **Apr. 11**, **May 9**.

Final Exam (35%) The final exam will be on **May 16, 1:30–3:30pm**.

Missed Exams and Quizzes In the case of *legitimate* and *documented* absences according to the University Attendance Policy (ugst.umd.edu/courserelatedpolicies.html) you have to **notify me as soon as possible by e-mail**. If the absence is justified the weight of the missed exam will be shifted to the final exam. Otherwise the exam will count as zero. For quizzes the average of the remaining quizzes will be used for legitimate absences, otherwise it counts as zero.

Matlab This course will use Matlab. You can download Matlab for free from terpware.umd.edu . Please do this immediately and study the introductory Matlab guides on the ELMS course page. Matlab commands related to the course topics will be explained in class.

Remarks Expect to spend about two hours of reviewing and homework for each hour of class time. Homeworks may require graphing calculators or Matlab. However, **graphing calculators will NOT be allowed on tests and quizzes**. Free tutoring and other resources are available, see the ELMS course page.