Syllabus for MATH 1252, Calculus and Differential Equations for Biology 2
Northeastern University, Summer 2 2015

Instructor: Neranga Fernando, Ph.D.

Office: 535 NI

E-mail: w.fernando@neu.edu

Office phone: 617-373-2080

Office hours: Tuesdays and Wednesdays, 1 pm – 2.30 pm, or by appointment.

Meeting times and location: MTWR, 8.00 am – 9.40 am at Kariotis Hall 110.


Web Materials: All class announcements, material, and grades will be posted on Blackboard.

Homework: Homework will be assigned, but will NOT be collected.

Quizzes: There will be 7 in-class quizzes during the semester.

Quiz 1: July 9
Quiz 2: July 16
Quiz 3: July 23
Quiz 4: July 30
Quiz 5: August 6
Quiz 6: August 13
Quiz 7: August 19

It is strongly advised that you do all of assigned homework since the quizzes will closely resemble the homework problems. There will be NO make-up quizzes.

Final exam:
The final exam is cumulative. Date and location of the final exam are to be determined. **Check for exam schedule conflicts as soon as possible.** Only two finals at the same time or three in one day is a University recognized legitimate reason to be excused from taking the final at the scheduled time. Students with such a conflict should complete a final exam conflict form, available on the registrar’s website.

Grading: The course grade will be determined as follows:
Final exam: 40%
Quizzes: 60%

Letter grades are determined numerically:

\[
\begin{align*}
A & \geq 93, \quad 92 \geq A- \geq 90, \quad 89 \geq B+ \geq 87, \quad 86 \geq B \geq 83, \quad 82 \geq B- \geq 80, \\
79 \geq C+ \geq 77, \quad 76 \geq C \geq 73, \quad 72 \geq C- \geq 70, \quad 69 \geq D+ \geq 67, \quad 66 \geq D \geq 63, \\
62 \geq D- \geq 60, \quad F \leq 59
\end{align*}
\]
The grade I (Incomplete) will be given only if you have a good attendance record, have missed the final exam for a good reason, and otherwise are doing passing work. An incomplete is given at the discretion of the instructor.

Additional Resources: The Mathematics Department Tutoring Center is in Room 540B, Nightingale Hall. This peer tutoring is free. Peer Tutoring appointments can be booked via MyNEU under TUTORING. Although you can walk in, it is really best to sign up in advance. Tutoring requests are scheduled by students in real-time and confirmed by email. Next-day appointments must be booked by 9:00 pm the previous day. Tutoring services in the Mathematics Department Tutoring Center will begin on July 7. See http://www.northeastern.edu/csastutoring/setting-up-appointments/ For more information about peer tutoring.

Issues with the course/instructor: If you have issues with this course and/or instructor which you are not comfortable discussing with your instructor, you should contact the Teaching Director, Prof. Massey, at d.massey@neu.edu.

Academic Honesty: Collaboration on quizzes, tests and final exam is not allowed. From Student Code of Conduct (see http://www.northeastern.edu/osccr/academicintegrity): "A necessary prerequisite to the attainment of the goals of the University is maintaining complete honesty in all academic work. Students are expected to present as their own only that which is clearly their own work in tests and in any material submitted for credit. Students may not assist others in presenting work that is not their own. ... Offenders are subject to disciplinary action.” For more on Academic Integrity see: http://www.northeastern.edu/registrar/courses/cat1213-univ-proc.pdf

Note the Following Dates:

July 19, is the last day to drop a Summer 2-15 class without a W grade
July 20, is the last day to elect pass/fail for Summer 2-15 class
July 28, is the last day to file a Final Exam Conflict Form for Summer 2-15 classes
August 7, is the last day to drop a Summer 2-15 class with a W grade

Important:

1) Any student with a disability is encouraged to meet with the instructor during the first week of classes to discuss accommodations. The student must bring a current Memorandum of Accommodations from the Disability Resource Center (DRC).

2) If you are an athlete and have conflicts with an important class activity (quiz, mid-term, or final), you should let your instructor know before the end of second week of classes. You should also bring an official letter from the Office of Athletics.

3) All electronic devices (mobile phones, laptops etc.) should be turned off during class time, quizzes, tests and final exam.

Syllabus: Syllabus is subject to change. It is your responsibility to be aware of any changes the instructor may make to the syllabus as they are announced in class. Students are responsible for all information given when they are absent.

TRACE: Please complete the TRACE evaluations at the end of the course.
Schedule of Topics

**Week 1: July 6 – 10**
- 6.5 Applications of Definite Integral
- 9.1 Integration by Substitution
- 9.3 Evaluation of Definite Integrals
- 9.2 Integration by Parts
- 9.5 Some Applications of the Integral
  Partial Fractions

**Week 2: July 13 – 17**
- 9.6 Improper Integrals
- 10.2 Separable Differential Equations
- 10.6 Applications of Differential Equations
  Parametric equations of Curves

**Week 3: July 20 – 24**
- 7.1 Functions of Several Variables
- 7.2 Partial Derivatives
- 7.3 Maxima and Minima of Functions of Several Variables
- 7.4 Constrained Optimization (Lagrange Method)
  Chain Rule

**Week 4: July 27 – 31**
- Dot Product
- Directional Derivatives
- Gradients
- Exact Differential Forms
- Line Integrals

**Week 5: August 3 – 7**
- Line Integrals and Exact Differentials
- Exact Differential Equations
- Integrating Factors
- 7.5 The method of Least Squares

**Week 6: August 10 – 14**
- 7.6 Double Integrals
- Green’s Theorem
- 11.1 Taylor Polynomials
- 11.2 Newton’s Method

**Week 7: August 17 – 21**
- 11.3 Infinite Series
- 11.4 Series with Positive Terms
- 11.5 Taylor Series
- Review

**August 24 - August 25 final exams**