

THE UNIVERSITY OF TEXAS AT EL PASO
COLLEGE OF SCIENCE
Department Of Mathematical Sciences

Course #: MATH 1312 (CRN 21321)
Course Title: Numerical Analysis
Credit Hrs: 3
Term: Spring 2018
Course Meetings & Location: MW 10:30 ~ 11:50, Liberal Arts Building 303
Prerequisite Courses: MATH 1411
Course Fee (if applicable) None

Instructor: Dr. Son-Young Yi
Office Location: Bell Hall 218
Contact Info: E-mail syi@utep.edu
Phone (915) 747-6864
Office Hours: MW 9:00 ~ 10:00 or by appointment

Textbook(s), Materials: Calculus, 11th Edition, by Larson and Edwards, Brooks/Cole Cengage Learning, 2017. Note that an electronic version of the book will be available through WebAssign.

Course Website: <http://www.math.utep.edu/faculty/yi/math1312s18.html>

Course Objectives
(Learning Outcomes): This course is the second part of the calculus sequence. In Calculus I, you were introduced to the three fundamental notions upon which calculus is built: limits, derivatives, and integrals. Our main objectives of this course are

1. to deepen the comprehension of these notions through conceptual discussions and the investigation of many problems and applications.
2. to master more advanced methods and techniques, and apply them to the solution of a variety of problems.

Course Activities/Assignments: **Homework:** Homework problems will be given at the start of each new chapter, but they will not be collected.

Quizzes: There will be weekly quizzes except for the weeks of exams. The problems will be taken directly from the homework problems or at least very similar to them. The lowest two quiz scores will be dropped at the end of the semester.

Course Schedule:

1/15: No class - Martin Luther King, Jr. Day
1/17: Sec. 8.1 Basic integration rules
1/22: Sec. 8.2 Integration by parts
1/24: Sec. 8.3 Trigonometric integrals
1/29: Sec. 8.4 Trigonometric substitution
1/31: Sec. 8.5 Partial fractions
2/5: Sec. 8.7 Indeterminate forms and L'Hopital's rule
2/7: Sec. 8.8 Improper integrals
2/12: Review for the Midterm 1
2/14: **Midterm 1**
2/19: Sec. 7.1 Area of a region between two curves
2/21: Sec. 7.2 Volume: the disk method
2/26: Sec. 7.3: Volume: the shell method
2/28: Sec. 7.4: Arch length and surfaces of revolution
3/5: Sec. 7.5: Work
3/7: Sec. 9.1 Sequences
3/19: Sec. 9.2 Series and Convergence
3/21: Sec. 9.3 The integral test and p-series
3/26: Review for the Midterm 2
3/28: **Midterm 2**
4/02: Sec. 9.4 Comparison of series
4/04: Sec. 9.5 Alternating series
4/09: Sec. 9.6 The ratio and root tests
4/11: Sec. 9.7 Taylor polynomials and approximations
4/16: Sec. 9.8 Power series
4/18: Sec. 9.9 Representation of functions by power series
4/23: Sec. 9.10 Taylor and MacLaurin series
4/25: Review for the Midterm 3
4/30: **Midterm 3**
5/2: Review for the final exam
5/11: **Final exam (10:00–12:45)**

Assessment of Course Objectives:

The final grade will be based on homework, three midterm exams, and a final exam. No books, notes, or programmable calculators will be allowed on the exams. A basic scientific calculator can be used.

Midterm 1: Wednesday, Feb. 14

Midterm 2: Wednesday, March 28

Midterm 3: Monday, April 30

Final exam: Friday, May 11, 10:00 am –12:45 pm.

- Grading Policy: Quizzes: 15%, Midterm exams: 20% each, Final exam: 25%
Note: A grade of Incomplete will be given only in extraordinary circumstances confined to a limited event. If the student has missed a significant amount of work (e.g. multiple assignments or tasks), a grade of Incomplete is not appropriate or warranted.
- Make-up Policy: **No make-up/alternate exam** will be given.
- Course Drop Policy: The UTEP Spring 2018 drop deadline is **March 29, 2018**. The College of Science will remain aligned with the University and not approve any drop requests after that date.
- Attendance Policy: It is student's responsibility to attend every class. Students are expected to arrive for class on time and to remain for the class entire period.
- Academic Integrity Policy: <http://admin.utep.edu/Default.aspx?PageContentID=2083&tabid=30292>
- Civility Statement: Please do not use cell phones, pagers, iPods, MP3 players, blue tooth devices, etc. during class. Cell phones and pagers should be set to silent or vibrate, and any calls should be taken outside of class. Please do not wear headsets or blue tooth devices during class.
- Disability Statement: If you have a disability and need classroom accommodations, please contact The Center for Accommodations and Support Services (CASS) at 747-5148, or by email to cass@utep.edu, or visit their office located in UTEP Union East, Room 106. For additional information, please visit the CASS website at www.sa.utep.edu/cass.
- Military Statement: If you are a military student with the potential of being called to military service and/or training during the semester, please contact me by the end of the first week of class.