

**MATH 202H: Calculus II**  
**Spring 2015**                      **Section 001**                      **4 credit hours**

**Instructor: Kristen Abernathy**

**Instructor's Teaching Schedule:** MWF 9:30-10:45  
MW 3:30-4:45

**Office:** Bancroft 148

**Office Phone:** 803-323-4681

**Math Department:** 803-323-2175

**Campus Email:**

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**Office Hours:** M 2:30-3:30  
W 8:30-9:30  
F 11:00-12:00  
and by appointment.

The instructor reserves the right to make modifications to this syllabus. Students will be notified in class & by email.

**Determination of Grade:**

**Skill Checks (30%)** In addition to regularly assigned homework from each section (which will not be collected), you will be assigned three "Skill Checks." These Skill Checks will serve as take-home tests to assess your proficiency in course material. For these Skill Checks, you are expected to turn in a written solution to each assigned problem. Skill Checks will be graded on the ability to correctly solve the mathematical problem, as well as provide a clear explanation of the mathematical problem-solving steps taken.

**Project (5%)** To supplement course material, there will be a writing project assigned late February. You may work in groups of two or three and you will be given two weeks to complete the project. Each group will receive a handout describing the expectations for the project later in the course.

**Honors Component (10%)** Additional activities are required as a part of the Honors designation of this course. Each student will do two lab assignments designed to deepen contact with calculus and the problems it involves. Further instructions will be given as each lab is assigned.

**Tests (45%)** There will be three in-class tests as listed on the attached schedule. You are expected to take the tests and the final exam at the scheduled time. Make-up tests are not given. An unexcused absence will result in the grade of zero for any missed test. Excused absences from tests will be dealt with at the end of the term and may depend on individual circumstances. Anticipated absences should be reported and verified in advance; emergency absences must be verified within one week after returning to class. Any questions concerning grading of tests must also be resolved within one week after the tests are returned.

**Final Exam (10%)** The cumulative final exam is scheduled for Tuesday, May 5, 2015, 11:30 AM.

**Letter Grade Determination:**

92-100 A	90-91.99 A-	87-89.99 B+	82-86.99 B	80-81.99 B-
77-79.99 C+	72-76.99 C	70-71.99 C-	67-69.99 D+	62-66.99 D
60-61.99 D-				

**Text, Materials, and Resources**

- Required Text: **Calculus Early Transcendentals 10E Chp 6-10 f/Winthrop**: Edition: 10<sup>th</sup>; ISBN: 9781118477885 by Anton
  - Students planning to take MATH201 and/or MATH202 only can choose to purchase the text materials in sections at a reduced cost.
  - Students planning to take MATH301 should purchase full text to reduce overall textbook costs.
  - A full color version of the textbook is on reserve at the Dacus Library.
- MATH202 students are expected to have a scientific calculator.
- Students are encouraged to use office hours as a way to receive extra help.
- The Mathematics Tutorial Center information is available at: [www.winthrop.edu/mtc](http://www.winthrop.edu/mtc).

**Course Policies**

1. Winthrop University is dedicated to providing access to education. If you have a disability and require specific accommodations to complete this course, contact the Office of Disability Services (ODS) at 323-3290. Once you

have your official notice of accommodations from the Office of Disability Services, please inform me as early as possible in the semester.

2. Review the student code of conduct for university policies on academic misconduct. Academic misconduct will not be tolerated and will result in a failing grade on the assignment and/or in the course. The full handbook is available online at: (<http://www2.winthrop.edu/studentaffairs/handbook/StudentHandbook.pdf>)
3. All electronic devices (including cell phones) other than a calculator should be set to silent and kept in your book bag or purse throughout class time unless otherwise instructed.
4. Students may not use cell phones, MP3 players, or other electronic devices in place of a calculator. Students may not share calculators during quizzes, tests, or the final exam. Any student caught using an unapproved electronic device during a quiz, test, or the final exam will receive a grade of zero on that assessment and the incident will be reported to the Dean of Students.
5. A grade of C- or better in MATH202 is required to enroll in MATH301.
6. MAED200 is a required co-requisite unless credit has already been awarded, to drop MAED200 you must also drop MATH202.

**Drop/Add:** Through F 1/16

**Spring Break:** M 3/16 through F 3/20

**SU and Course Withdraw Date:** W 3/11

**Final Exam:** T 5/5

### Course Goals and Departmental Goals for Students

This course meets the Logic, Language, and Semiotics requirement through activities and requirements that require students to: (1) use logic and mathematical information to draw reasonable conclusions and (2) use the symbols and language of mathematics to communicate about problems and present solutions.

Course Goals/SLO	University Level Competencies
Students apply fundamental mathematical concepts and techniques to solve problems and evaluate results.	<p><b>Competency 1</b>  <b>Winthrop graduates think critically and solve problems.</b></p> <p>Winthrop University graduates reason logically, evaluate and use evidence, and solve problems. They seek out and assess relevant information from multiple viewpoints to form well-reasoned conclusions. Winthrop graduates consider the full context and consequences of their decisions and continually reexamine their own critical thinking process, including the strengths and weaknesses of their arguments.</p>
Students will apply integration and differentiation techniques to the transcendental functions	
Students will master new techniques of integration (e.g. integration by parts, trigonometric substitution, partial fractions, etc.)	
Students will apply integration, utilizing new techniques, to real world problems	
Students will gain a working knowledge of sequences and series	<p><b>Competency 3</b>  <b>Winthrop graduates understand the interconnected nature of the world and the time in which they live.</b></p> <p>Winthrop University graduates comprehend the historical, social, and global contexts of their disciplines and their lives. They also recognize how their chosen area of study is inextricably linked to other fields. Winthrop graduates collaborate with members of diverse academic, professional, and cultural communities as informed and engaged citizens.</p>
Students will use power series to represent transcendental functions over appropriate intervals	

For purposes of departmental assessment of student learning in this course, sections of the final exam may be tabulated for all students. Individual tests and course grades may also be used as an indication of progress toward the above goals.

### Tentative Course Schedule

1/12		No Class *Skills Check 1 assigned*
1/14	6.1	Area Between Two Curves
1/16	6.2 & 6.3	Volume
1/21	6.2 & 6.3	Volume
1/23	6.2 & 6.3	Volume
1/26	6.4 & 6.5	Length of a Plane Curve & Area of a Surface of Revolution
1/28	6.6	Work *Skills Check 1 due*
1/30	6.8	Fluid Pressure and Force
2/2		<b>Test 1</b>
2/4	7.1 & 7.2	Overview of Integration & Integration by Parts
2/6	7.3	Integrating Trigonometric Functions
2/9	7.4	Trigonometric Substitutions
2/11	7.4	Trigonometric Substitutions
2/13	7.5	Integrating Rational Functions by Partial Fractions
2/16	7.5	Integrating Rational Functions by Partial Fractions
2/18	7.7	Numerical Integration; Simpson's Rule
2/20	7.7	Numerical Integration; Simpson's Rule *Skills Check 2 assigned*
2/23	7.8	Improper Integrals
2/25	8.1	Modeling with Differential Equations
2/27	8.2	Separation of Variables
3/2	8.3	Slope Fields; Euler's Method
3/4	8.4	First-Order Differential Equations and Applications
3/6		<b>Test 2</b> *Skills Check 2 due*
3/9	9.1	Sequences
3/11	9.2	Monotone Sequences
3/13	9.3	Infinite Series
3/23	9.4	Convergence Tests
3/25	9.5	The Comparison, Ratio, and Root Tests
3/27	9.6	Alternating Series; Absolute and Conditional Convergence
3/30	9.6	Alternating Series; Absolute and Conditional Convergence *Skills Check 3 assigned*
4/1	9.7	MacLaurin and Taylor Polynomials
4/3	9.8	MacLaurin and Taylor Series; Power Series
4/6	9.8	MacLaurin and Taylor Series; Power Series
4/8	9.9	Convergence of Taylor Series
4/10	9.10	Differentiating and Integrating Power Series; Modeling with Taylor Series
4/13	10.1	Parametric Equations; Tangent Lines and Arc Length for Parametric Curves *Skills Check 3 due*
4/15	10.2	Polar Coordinates
4/17	10.3	Tangent Lines, Arc Length, and Area for Polar Curves
4/20	10.4	Conic Sections
4/22	10.4	Conic Sections
4/24		<b>Test 3</b>
4/27		Review for Final Exam