

**Instructor:** Prof. Jan Minton  
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461 Trexler Hall  
Office Phone: 375-2488  
Office Hours: Monday and Wednesday 3:30-4:30  
Otherwise by appointment

JMinton Study Hall Tuesday and Thursday 3:00-5:00  
372 Trexler Hall

**Course Objective:** This course provides an introduction to calculus with integrated precalculus review of relevant topics. Calculus topics include the study of limits, derivatives, and graphing. Precalculus topics, which will be presented and reviewed as they are needed, include factoring, trig functions, exponents and inverse functions. An additional focus of the course will be the use of technology as a learning aid.

**Intended Learning Outcomes:**

- ... apply techniques of differentiation to model and solve problems.
- ... understand the role of Calculus and the infinitesimal in modern mathematics
- ... calculate, by hand, rudimentary limits and derivatives
- ... understand and manipulate various types of functions
- ... recognize the role of technology in Calculus, understand when it should be used, and be aware of its limitations.

**Required Materials:** **Text:** *Calculus: Early Transcendental Functions*, Smith and Minton, 4th Edition  
**Technology:** Graphing Calculator  
*Inquire* course management system available through MyRoanoke  
Installation of *Mathematica* software – see course *Inquire* site for instructions

**Attendance Policy:** Full attendance is expected. Simple attendance is not graded, but graded activity will occur during many class periods. As stated in the Academic Catalog, “Every student is accountable for all work missed because of class absence. Instructors, however, are under no obligation to make special arrangements for students who are absent.” Also, anytime you come in late or leave during class you miss part of the course and you disrupt the educational experience for everyone else. Do this only in the case of emergency.

**Overall Workload:** In addition to the 3 hours of class time, you are expected to work outside of class for a minimum of 9 additional hours per week.

**Quizzes:** **Weekly:** There will be weekly quizzes on recent calculus material. No make-up quizzes will be given, but the lowest quiz grade will be dropped.

**Algebra:** There will be a quiz on *Inquire* for each pre-calculus review topic. These quizzes will be available for 24 hours following the in-class review. There will be no make-ups after the quiz closes on *Inquire*. None of these grades will be dropped.

**Preparation:** Following each video assignment, there will be a very brief quiz or hand-in assignment. Together these will count as one weekly quiz grade. No make-ups. No drops. The preparation average is not eligible to become the dropped grade in the weekly category.

**Mathematica** Throughout the semester we will enhance our study of calculus by doing a series of Mathematica Projects. These projects will introduce you to the software package Mathematica and allow you to take advantage of its graphical and computational capabilities to reinforce your understanding of calculus.

**Assignments:** Practice problems will be assigned regularly from the textbook. For the most part these will not be graded, but it is important that you do these exercises in a timely fashion so that you can monitor your own progress.

You are expected to watch and learn from all video lessons posted by the instructor. These video lessons will make it possible to use class time for student activities.

**Tests/Exams:** There will be four tests and a final exam as indicated on the day by day course schedule. Make-up tests will be given only under *very* extenuating circumstances that prohibit you from physically appearing in the classroom.

**Co-curricular Involvement:** The Math, Computer Science and Physics department offers a series of discussions that appeal to a broad range of interests related to these fields of study. These co-curricular sessions will engage the community to think about ongoing research, novel applications and other issues that face our discipline. There is a link to the dates and times for these sessions on *Inquire*.

Members of this class are invited to attend all appropriate meetings; however participation in **at least two** of these sessions is mandatory. A response form is available on *Inquire*. Within one week of attendance, students must submit this completed form to the instructor. These two scores will count in the Preparation Quiz category.

**Academic Integrity And Electronic Devices:** The college policy is fully supported. All tests and quizzes will be closed book and closed notes unless otherwise indicated.

The use of any electronic device during a quiz or exam is strictly prohibited. Exceptions may be made regarding the use of calculators or computers. Cell phones are never permitted. **Any use of a non-approved device during a quiz or exam will be considered a breach of academic integrity.**

**Grading:** Weights for the various components of the course and final course letter grade assignments are given below:

|                      |     |          |          |            |
|----------------------|-----|----------|----------|------------|
| Algebra Quizzes      | 10% | A 93-100 | B- 80-82 | D+ 67-69   |
| Weekly Quizzes       | 15% | A- 90-92 | C+ 77-79 | D 63-66    |
| Mathematica Projects | 15% | B+ 87-89 | C 73-76  | D- 60-62   |
| Tests (10% each)     | 40% | B 83-86  | C- 70-72 | F below 60 |
| Final Exam           | 20% |          |          |            |

**IMPORTANT TO NOTE:** The *Inquire* gradebook will be used for grade STORAGE only. *Inquire* will not be used to calculate your official course average. Any averages you might see in *Inquire* for this course should not be trusted.

**Note:** Material, content, and scheduling are subject to change if deemed appropriate or necessary by the instructor.

**Math 118 Schedule  
Fall 2015**

|            |                     |                        | <b>Weekly</b>     |                    |
|------------|---------------------|------------------------|-------------------|--------------------|
| <b>Day</b> | <b>Date</b>         | <b>Topic</b>           | <b>Quiz</b>       | <b>Mathematica</b> |
| W          | Sept 2              | 1.1                    |                   |                    |
| F          | Sept 4              | 1.2                    |                   |                    |
| M          | Sept 7              | Intro to Mathematica   |                   | Project 1          |
| W          | Sept 9              | 1.3 (with Alg. Review) | Q1                |                    |
| F          | Sept 11             | 1.3/1.4                |                   |                    |
| M          | Sept 14             | 1.4                    |                   |                    |
| W          | Sept 16             | 1.5                    | Q2                | Project 2          |
| F          | Sept 18             | 1.5                    |                   |                    |
| M          | Sept 21             | Review                 |                   |                    |
| W          | Sept 23             | <b>Test 1</b>          |                   |                    |
| F          | Sept 25             | 1.6 (with Alg. Review) |                   |                    |
| M          | Sept 28             | 1.6/2.1                |                   |                    |
| W          | Sept 30             | 2.1 (with Alg. Review) | Q3                |                    |
| F          | Oct 2               | Motion Detector        |                   | Project 3          |
| M          | Oct 5               | 2.2 (with Alg. Review) |                   |                    |
| W          | Oct 7               | 2.2                    | Q4                | Project 4          |
| F          | Oct 9               | 2.3 (with Alg. Review) |                   |                    |
| M          | Oct 12              | 2.3                    |                   |                    |
| W          | Oct 14              | Review                 |                   |                    |
| F          | Oct 16              | <b>Test 2</b>          |                   |                    |
|            | <b>Fall Break</b>   |                        |                   |                    |
| M          | Oct 26              | 2.4 (with Alg. Review) |                   |                    |
| W          | Oct 28              | 2.4/2.5                |                   | Project 5          |
| F          | Oct 30              | 2.5                    |                   |                    |
| M          | Nov 2               | Workshop Day           |                   |                    |
| W          | Nov 4               | 2.6 (with Alg. Review) | Q5                |                    |
| F          | Nov 6               | 2.6                    |                   | Project 6          |
| M          | Nov 9               | 2.7 (with Alg. Review) |                   |                    |
| W          | Nov 11              | 2.7                    | Q6                |                    |
| F          | Nov 13              | Review                 |                   |                    |
| M          | Nov 16              | <b>Test 3</b>          |                   |                    |
| W          | Nov 18              | 2.8 (with Alg. Review) |                   |                    |
| F          | Nov 20              | 2.8/2.10               |                   | Project 7          |
| M          | Nov 23              | 2.10                   | Q7                |                    |
|            | <b>Thanksgiving</b> |                        |                   |                    |
| M          | Nov 30              | 3.1 (with Alg. Review) |                   |                    |
| W          | Dec 2               | 3.1/3.2                |                   | Project 8          |
| F          | Dec 4               | 3.2                    | Q8                |                    |
| M          | Dec 7               | Review                 |                   |                    |
| W          | Dec 9               | <b>Test 4</b>          |                   |                    |
| F          | Dec 11              | Review                 |                   |                    |
| <b>Tue</b> | <b>Dec 15</b>       | <b>8:30-11:30</b>      | <b>FINAL EXAM</b> |                    |

