Instructor: Prof. Jan Minton
461 Trexler Hall
Office Hours: MW: 2:30-3:45, TTH 2:00-4:00
Thursday evenings 7:00-9:00 Trexler 271
Friday and other times by appointment
Office Phone: 375-2488
e-mail: jminton@roanoke.edu

Course Objective: This course provides a continuation of the study of calculus. Topics to be studied include more applications of the definite integral, sequences and series and applications of them, and vectors and functions of several variables. Furthermore students should become stronger problem solvers and more independent “mathematicians”.

Intended Learning Outcomes:
… apply the theory of differentiation and integration to model and solve real-world problems.

… determine the behavior of infinite series and understand the role of power series and Taylor series in modern mathematics.

… utilize vectors in two-dimensional and higher-dimensional coordinate systems to model graphs and equations, and apply methods of Calculus to these graphs and equations.

… recognize the role of technology in Calculus, understand when it should be used, and be aware of its limitations.

Required Text: Calculus: Early Transcendental Functions, Smith and Minton, 3rd Edition

Materials
Calculator: TI-83 Calculator or similar. NOTE: a calculator with symbolic calculation of derivatives or integrals will not be allowed on graded work.

iClicker device
optional – Laptop with Mathematica installed

Attendance Policy: Full attendance is expected and you are responsible for everything done and assigned in class and lab. Also see the Academic Catalog regarding attendance.

Participation, Reading Questions, Preview Problems: This course requires a high level of engagement on the part of the students. Students must come to class prepared. The attached course schedule lists sections by day. Students are expected to read the section for a given day. Guided reading questions will be available on Blackboard. Students will use an electronic response system (clicker) to answer these questions during class. One or two preview problems will be assigned and collected each class period.

Homework And Quizzes: Practice homework will be assigned each class period. Each student must keep an orderly (sections in order and problems clearly labeled) folder of practice problems that occasionally will be collected for review by the instructor. Students must bring the homework folder to every class meeting as the collection times will be unannounced. Group work is encouraged on the homework but each individual must understand what he/she writes for inclusion in the homework folder. There will be a brief weekly homework quiz at the beginning of the lab time on Thursdays. No make-up quizzes will be given, but the lowest quiz grade will be dropped.

Self Assessment: Students must email a self assessment to calc.report@gmail.com by class time each Wednesday. This report will include an assessment of homework success (odd numbered problems will be assigned so students can check their own work), reflection on classroom engagement, description of how time was spent on Calculus outside of class (worked independently, worked with other calculus students, got help during office hours or evening hours, or other forms of activity), and any other information the student wishes to convey.
Lab: The Thursday lab (8:30-10:00) time will be used primarily for extended exploration of a topic. Lab write-ups are due by class time on the following Monday.

Tests/Exams: There will be four tests and a final exam. Tests will be given during the Thursday lab time on the dates given on the course schedule. Note that the final exam time corresponds to Block 9 (our lab) on the college’s spring exam 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. Dates and times for these sessions will be made available at a later time. In addition to in-class announcement, flyers about upcoming talks are posted on the third floor of Trexler Hall.

Members of this class are encouraged to be involved with all of these meetings; however participation in at least two of these sessions is mandatory. A response form is available in Blackboard as a Course Document. Within one week of attendance, students must submit this completed form to the instructor.

Support: In addition to the help available to students during the instructor’s general office hours stated above, evening support is also available 7-9 pm on Tuesday and Thursday in Trexler 271. A member of the calculus teaching faculty will be available during the evening to assist Math 122 students with reading comprehension and offer problem solving guidance. This time can also be used to form calculus study groups so students of all levels of expertise are encouraged to attend.

Academic Integrity And Electronic Devices: The college policy is fully supported. All tests and quizzes will be closed book and closed notes. Group work is allowed on the homework but it must be written up individually. Collaboration is required for in-class lab work and rules regarding related outside of class work will be clearly indicated on the assignment.

Cell phones and pagers must be turned off prior to entering the classroom. In the unlikely event that you need to turn on your cell phone during class, you must have permission of the instructor to do so. Otherwise, anyone using a cell phone for any reason during class is subject to being dropped (DF) from the course. The use of any electronic device during a quiz or exam is strictly prohibited. This includes PalmPilots, Pocket PCs, and Blackberrys. Any use of such devices during a quiz or exam will be considered a breach of academic integrity. The TI-89 calculator may be used unless specified otherwise.

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

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
<th>Grade Range</th>
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</thead>
<tbody>
<tr>
<td>Each Test</td>
<td>12%</td>
<td>A 93-100</td>
</tr>
<tr>
<td>Quiz Average</td>
<td>12%</td>
<td>A- 90-92</td>
</tr>
<tr>
<td>Lab Average</td>
<td>15%</td>
<td>B+ 87-89</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20%</td>
<td>B 83-86</td>
</tr>
<tr>
<td>All Other</td>
<td>5%</td>
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</tbody>
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Failure to complete the co-curricular component of the course will result in the lowering of the final course grade by one level. For example an A becomes an A-, and an A- becomes a B+, and so on.

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