Important Note: As a result of days lost to Florence, UNCW requires all syllabi to be rewritten subject to the new schedule. Those sections of the syllabus where there are significant changes have been moved to the front of the syllabus. Please review the new class meeting times, the times of the hour and final examinations, new office hours and optional problem sessions, and additional available online assistance. This is the new syllabus as of October 4, 2018.

While I wish for each of you that the impact of Florence is minimal, that may not be the case for you personally. The syllabus is redesigned to provide you with additional academic resources to help you successfully complete this course in spite of these difficult times.

Welcome back. I look forward to seeing you Monday in class.

Ken Gurganus

Fall, 2018

CLASS: MAT 162-001   8:50-9:45 MWF OS 2004 & 8:50-9:45 TR OS 2006

MAT 162-002   11:00-11:55 MWF OS 2004 & 11:00-11:55 TR OS 2006

INSTRUCTOR: Dr. Kenneth Gurganus (gurganus@uncw.edu)   **OFFICE**: OS 2016B **PHONE**: 962-3297

SYLLABUS with tentative hour test dates:
Sections 7.1-7.8 ....Monday, October 15
Sections 8.1-8.3, 8.5, 9.1-9.5, 17.1 ....Monday, November 5
Sections 11.1-11.11 ....Tuesday, November 27
Sections 10.1-10.6 ....(will be included on final exam)
Final Exam (cumulative):
Section 001   ....Monday, December 10, 8-11 AM in OS 2006

Section 002---------------------------------Wednesday, December 12, 11:30-2:30 AM PM in OS 2004

Other important dates:
Wednesday, August 22—first day of classes;
Monday, September 3; Wednesday, Thursday & Friday, Nov. 21-23----no classes;
Wednesday, August 29—last day to add or drop without grade;
Monday, October 22—last day to withdraw for undergraduates;
Friday, December 7—last day of classes.

The class period before each test will contain a review/problem session.

In OS 2006, there will be three optional problem sessions scheduled on Saturday, October 13 from 9-12 noon; Saturday, November 3 from 9-12 noon; and Monday, November 26 from 7PM to 9PM. These will be joint sessions for MAT 162 Sections 001, 002, 003, and 004 held before each of the hour examinations.

Office Hours: 8-8:45 MWF and 10-10:50 AM MTWRF with additional times by arrangement. These hours are subject to change during the semester. If you see me and need help regardless of the time, just ask.

The TA for this course is available 3:30-5:00 PM in OS 2006 for reviewing and discussing problems. The specific Tuesdays are October 9, 16, 23, 30, November 6, 13 and December 4.

For hours and services of the University Learning Center (ULC) Math Lab in DePaolo 1056, go to
https://uncw.edu/ulc/math/index.html

Stewart Calculus: tutorials, helpful links, etc.

8th edition: http://www.stewartcalculus.com/media/17_home.php

Paul's Notes: Lamar University Professor Paul Dawkins' notes on algebra, calc I, II, III, differential equations, etc.

Highly recommended by many students and professors.

http://tutorial.math.lamar.edu/

Algebra and Trig Review

Summary sheets for Algebra, Trig, Limits, Derivatives, and Interals

Khan Academy – great source of short instructional videos on many subjects:

https://www.khanacademy.org/math

Textbook and WebAssign information for students in MAT 162:

Required Text is *Calculus: Early Transcendentals, 8th ed.*, by James Stewart, published by Cengage.

For this course, WebAssign is NOT required.

If you took MAT 161 at UNCW, then you should already have the textbook (either a hard copy or an electronic copy on WebAssign or both) *and* a WebAssign account that you created for MAT 161 with the access code that came with your text, if you purchased it at the UNCW Bookstore. The Access Code that comes with the text purchased at the UNCW Bookstore is good for MAT 161, 162, and 261, so you have nothing further to purchase, unless you just purchased one semester's use of WebAssign directly from the publisher, Cengage. We will be covering chapters 7 – 11 and 14.1 in the textbook. I will assign homework exercises in the book, but you are also welcome to use WebAssign to help you master the material, as well.

If you did not take MAT 161 at UNCW, you have some options.

- Purchase a bundle at the UNCW Bookstore for $184.30 that includes a loose-leaf copy of the textbook and a multi-semester access to WebAssign. WebAssign gives you electronic access to the text, solutions to odd-numbered textbook exercises, and interactive exercises to help you master the material.
- Purchase the bundle elsewhere on line (ISBN 9781305616691).
- Purchase or rent directly from the publisher (several options are available):
  https://www.cengage.com/c/calculus-early-transcendentals-8e-stewart
  - Purchase a hard copy of the textbook.
  - Rent a hard copy of the textbook.
  - Purchase single or multiple semester access to the e-book.
  - Purchase single or multiple semester access to WebAssign.net (includes electronic access to the text, solutions to odd-numbered problems, interactive exercises, etc.)

Using WebAssign: https://www.webassign.net/

Click the red LOG IN button in the upper left-hand corner of the screen.

On the next screen, at the bottom of the page, you have two options.

If you are new to WebAssign, choose the option on the lower left:

If you already have a WebAssign account, chose the option on the lower right:

For my MAT 162 course, the course code is **uncw 3261 0932.**

Once you have added the course, you will log in, and it will take you directly to this course.

Grading: Each of the hour tests and the final will be graded on a ten point scale:
90-100 A; 80-89 B; 70-79 C; 60-69 D.
If I feel it is justified, some adjustment downward may be made at times.
"Plus or minus grading may be awarded at the discretion of the faculty [Undergraduate Catalogue]."
The hour test average will count approximately 65% of the final grade and the final exam approximately 25%.

Homework will be regularly assigned but generally not collected only because you should do much more homework than I can possibly have graded. You will be notified in advance that some assignments such as Maple lab assignments are to be collected and graded. Other graded assignments of generally no more than one or two problems may be assigned, done, and collected within a single class meeting with or without prior notice. They may be open or closed book assignments. Such assignments along with graded homework will account for approximately 10% of the final grade.

Attendance is to be regularly taken and is expected of every student. It is definitely your responsibility to learn all material covered and this can best be achieved by regular class attendance and by keeping up with the daily pace of the class.

Make-up tests will not be given unless you have a reason for missing a test that I determine valid. Even then I reserve the option of using the corresponding portion of the final exam for a make-up test. If you know that you will miss a test, let me know before the test if possible. In any case, inform me as soon as possible.

The final exam will cover the entire course and will be graded two ways. The entire final exam grade will count approximately 25% of the final grade. If there is improvement over any hour test grade (or homework average), that hour test grade will be replaced by the weighted average of the final exam grade and the test grade with the higher exam grade weighted three times more than the hour test grade.

Students with Disabilities: If you have a disability and need reasonable accommodation in this course, you should inform me of this fact in writing within the first week of class or as soon as possible. If you have not already done so, you must register with the Office of Disability Services in DePaolo Hall (extension 7555) and obtain a copy of your Accommodation Letter. You should then meet with me to make mutually agreeable arrangements based on the recommendations of the Accommodation Letter.

UNCW's Academic Honor Code applies to all members of the university community. All students are expected to read and abide by the Academic Honor Code that is in the Student Handbook and Code of Student Life.

State Policy on Excused Absences for Religious Observance: In accordance with North Carolina G.S. 116-11(3a), students are entitled to two excused absences per academic year for religious observances. In order to preserve your right to make up any tests or other work missed for religious observance required by your faith, you must inform the Registrar in writing of your intended absence before the end of the first week of class.

MAT 162 Model Syllabus
(Approved March 2010)
(Revised and Approved October 2015)
(Updated by LDMIG October 2016)

Course Catalog Description:
MAT 161-162. Calculus with Analytic Geometry (4-4) Prerequisite: MAT 112 or 115 or equivalent preparation in algebra and trigonometry. Calculus of a single variable intended for students in the mathematical and natural sciences. Functions and limits; differentiation with applications including maxima and minima, related rates, approximations; theory of integration with applications; transcendental functions; infinite sequences and series; conic sections, parameterized curves and polar coordinates; elementary differential equations. Three lecture and two laboratory hours each week. Satisfies University Studies IV: Building Competencies/Critical Reasoning.

Goal of the Course:
MAT 162 is the second half of the standard university single variable calculus sequence.   Its principal goal is to show how calculus has served as the primary quantitative language of science and engineering for the last three centuries by providing the theoretical basis used to measure change. Students will further investigate the processes of differentiation and integration introduced in MAT 161 in addition to the topics of differential and parametric equations and infinite sequences and series. Students will study the wider application of these skills in the natural and social sciences and communicate the results of these investigations.

Course Student Learning Objectives:
Upon completing MAT 162, students should be able to:
- use graphical, numerical, analytical and verbal representations of integrals, differential and parametric equations, sequences and infinite series (CR 1)
- use correct mathematical syntax to explain solutions in both written and graphic forms (CR 1, 4)
- use technology to help solve problems, experiment, interpret results, and verify and communicate conclusions (CR 3, 4)
- use techniques of integration and differential equations to solve problems involving two or more STEM disciplines (CR 2, 3, 4)
- demonstrate understanding of the properties of conic sections and other curves in polar and parametric form
- demonstrate understanding of convergence properties of sequences and series
- model real-world problems using the concepts of calculus (CR 1, 2, 3, 4)

- analyze and articulate the reasonableness of solutions, including sign, size, relative accuracy, and units of measurement. (CR 3, 4)

Approved Text and Course Outline: MAT 162. Calculus with Analytic Geometry II

Required Text:
Calculus: Early Transcendentals, 8th edition, by Stewart (2016)

Chapter	Topic/Title	Sections	Suggested Number of Lectures
	Review of Trig., Differentiation and Integration		5
7	Techniques of Integration	1-8	15
8	Further Applications of Integration	1-3	7
9	Differential Equations	1-5	5
17	Second-order Differential Equations	1	2
10	Parametric Equations and Polar Coordinates	1-6	13
11	Infinite Sequences and Series	1-10	15

Except as specifically noted, all of the topics in the sections listed must be covered. This syllabus is designed for a course that has 50-minute class meetings. The suggested number of lectures per chapter includes lectures and labs but does not include review days and testing.

Required Technology in MAT 162:
MAPLE is the principal mathematical software used in MAT 162. The departmentally approved and required minimal expectations for computer use in MAT 162 are: function approximation, convergence, parametric equations, and polar equations. The theme of graphing and graphical analysis is to be continued, and clearly there are other topics that benefit from technology as well, including: direction fields for differential equations, Euler's Method, obtaining error estimates for the trapezoidal rule and Simpson's Rule, obtaining error estimates for series approximations, and graphing position functions for oscillation problems. The text identifies by a special icon those exercises that require some form of technology. Exercises that require the full power of a computer algebra system are identified in the text by a CAS icon. Students will utilize this technology in classroom exercises in computer-equipped classrooms and other lab assignments to be completed outside of class. [Added by KRG: A graphing calculator is not required, but will be helpful.]