Fall 2014 MAT151-005

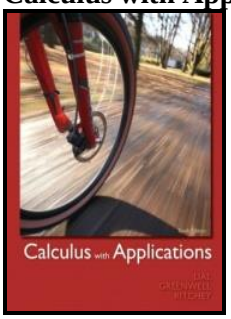
Basic Calculus with Applications I BR106 12:30 PM – 1:45 PM T-TH

Instructor: Dr. Xin Lu **Email:** lux@uncw.edu **Phone:** 910-962-3673

Office: BR 214 **Office Hours:** T-Th 9:00AM-12:00 PM

⇨ **Textbook (optional)**
Highly suggested if you have not had a mathematics course recently.

Calculus with Applications, 10th Edition



By Margaret L. Lial, Raymond N. Greenwell, Nathan P. Ritchey.

Published by Addison-Wesley.2012

Topics(chapters) that will be covered:

1 Linear Functions
2 Nonlinear Functions
3 The Derivative
4 Calculating the Derivative
5 Graphs and the Derivative
6 Applications of the Derivative
7 Integration

TECHNOLOGY: Graphing Calculator

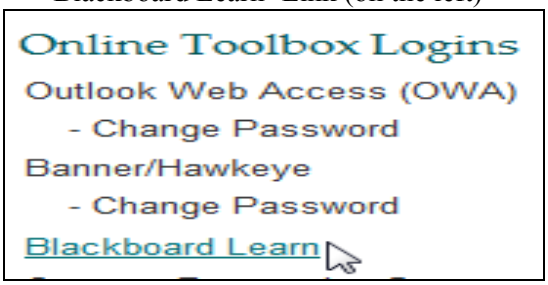
TI – 83 or TI – 84 (highly recommended) is allowed during testing. TI-89 (or similar model) is NOT allowed during tests. Devices with calculator features are NOT allowed during tests, i.e. cell phones, iPads, etc. CANNOT be used as a substitute.

Also, the graphing and numerical capabilities of the graphing calculator are to be used to supplement, not replace, the traditional formula-based instruction. The purpose of using a graphing calculator is to clarify and reinforce concepts, as a means of discovery, and as an efficient problem-solving tool.

⇨ **Blackboard LEARN [Required]**
Access point for required online homework, the online portion of exams, student handouts, lecture notes, etc.

Access Portal via UNCW Current Student page –

- 'Blackboard Learn' Link (on the left)



Login Procedure
Username: *your UNCW email account (without "@uncw.edu")*
Password: *your password*

- Be sure to use the browser check.
- Be sure you have a pdf reader installed.

If you have any Blackboard issues, contact TAC directly and immediately: 1.910.962.HELP. After doing so, inform me and be sure to record your ticket number.

- **DO NOT USE 'MySeaport' Link**

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Course Catalog Description: MAT 151-152. Basic Calculus with Applications (3-3) Prerequisite: for MAT 151: MAT 111 or 115 or the equivalent preparation in algebra; for MAT 152: MAT 112 or 115 or the equivalent preparation in algebra and trigonometry and MAT 151. This calculus sequence is intended for majors that emphasize techniques and applications rather than theory and derivations. Differentiation and integration of algebraic and certain transcendental functions, partial differentiation, sequences and series.

Goal of the Course: MAT 151 is the initial half of the standard two-semester university basic calculus sequence. The intended audiences are students majoring in biological sciences, business, and social sciences. Its principal goal is to show how calculus has served as the primary quantitative language of applications arising from these fields. It provides the basic theoretical ideas used to model change. Students in this course will develop the mathematical skills found in the core topics of limits, differentiation, and integration. Students will investigate the wider application of these skills in the natural and social sciences and communicate the results of these investigations.

MAT 151 will count for the Mathematics and Statistics requirement in University Studies by supporting all the Common Student Learning Outcomes (MS) for that category. If another course is used to meet the Mathematics and Statistics requirement of University Studies, MAT 151 may count for the Quantitative and Logical Reasoning requirement by supporting all the Common Student Learning Outcomes (QRE) for Quantitative and Logical Reasoning.

Course Student Learning Objectives: Upon completing MAT 151, students should be able to:

- Use graphical, numerical, analytical and verbal representations of functions, limits, derivatives and integrals. (MS 1; QRE 1)
- understand the meaning of the derivative in terms of a rate of change and use derivatives to solve a variety of problems. (MS 1 & 2; QRE 1 & 2)
- understand the meaning of the definite integral both as a limit of Riemann sums and as the net accumulation of change and use integrals to solve a variety of problems. (MS 1 & 2; QRE 1 & 2)
- understand the relationship between the derivative and the definite integral as expressed in the Fundamental Theorem of Calculus. (MS 1; QRE 1)
- use correct mathematical syntax to explain solutions in both written and graphic forms. (MS 3; QRE 3)
- model a variety of applications using the concepts of calculus. (MS 2 & 3; QRE 2 & 3)
- use technology to help solve problems, interpret results, and verify and communicate conclusions. (QRE 1 & 2)
- determine the reasonableness of solutions, including sign, size, relative accuracy, and units of measurement. (MS 2 & 3; QRE 1, 2 & 3)

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Homework, Tests and Grading: All the homework will be assigned via **Blackboard LEARN**. You are responsible for checking the availability/due dates and times. The homework average out of 100 points possible will count towards your final grade - basically equivalent to one exam grade. There will be three regular exams (100 points each) and a final exam (100 points). The final exam is comprehensive. [Unless stated otherwise, each exam (regular and final) will consist of **two** REQUIRED parts: an **online** part (available at least 24 hours prior to the in-class version) and an **in-class** part.] The online part will be delivered via **Blackboard LEARN** with a submission deadline. [Be sure to save your answers as you go!]Therefore, the total points earned out of 500 points will be scaled to determine your final grade as follows:

$90\% \leq$ **A-**$< 92\%$; $92\% \leq$ **A** $\leq 100\%$;

$80\% \leq$ **B-**$< 82\%$; $82\% \leq$ **B**$< 87\%$; $87\% \leq$ **B+** $< 90\%$;

$70\% \leq$ **C-**$< 72\%$; $72\% \leq$ **C**$< 77\%$; $77\% \leq$ **C+**$< 80\%$;

$58\% \leq$ **D-**$< 60\%$; $60\% \leq$ **D**$< 67\%$; $67\% \leq$ **D+** $< 70\%$;

F: below 58%.

Exam Dates:

Exam #1: Thursday, February 19

Exam #2: Tuesday, March 24

Exam #3: Thursday, April 23

FINAL EXAM: Thursday, May 7, 11:30AM – 2:30 PM

Online Part of Exams: Keep in mind that the online versions for ALL exams will typically be available at least 24 hours prior to the in-class versions and will be due by 11:59 pm of the scheduled, corresponding in-class exam day. You will be notified with information.

Normally, NO make-up exams (regular) are permissible!! Consideration of a make-up exam (regular) will only be given at the discretion of and under terms specified by the instructor. No make-up homework/final exam!

Incompletes: A grade of **I** (incomplete) is given only if approved documented circumstances beyond the student's control (e.g. medical, legal) render the student unable to complete the course work, and only if there is a reasonable possibility of passing the course. The grade **I** is not given simply failing to meet the course requirements.

Note: Productive and effective study skills are important. You probably have heard this before, but mathematics is not a spectator sport. Practice solving math problems regularly and checking your answers/work should also increase the likelihood that you can solve similar problems

correctly, quickly, and independently. This can also help you determine the difficulty level you may actually have. It may also help you with delegating how much extra study time you may need and/or if you need to receive assistance outside of class. You may not really know, unless you practice the problems and check your answers. When seeking help, please provide any and all attempted work–this can increase the quality of the help you receive, as well as decrease the time.

Attendance: Being on time and regular class attendance are some aspects expected, as well as a respectable presence. Class attendance is one aspect that could help or harm the final grade of a student whose final average is on the borderline between two grades. A student who has **two or less** absences may replace the lowest test grade from the **first two exams by the highest of the four (including final)** An incomplete test is not replaceable. Three absences are considered excessive.

Listed below are some other specific expectations for this course:

- Make your class notes from posted lecture notes/read textbook material for each topic
- Do your required homework via Blackboard Learn (take note of availability and due dates)
- Check UNCW email on a regular basis
- Communicate regularly with the instructor regarding any questions, concerns or comments
- Be professional/respectful in all your activities
- Adhere to the UNCW Honor Code and syllabus
- Remember this is an undergraduate class with high expectations for student performance

Religious Observance Policy: In accordance with North Carolina G.S. 116-11(3a), you are entitled to two excused absences for religious observances per academic year. 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.

Academic Honor Code and Seahawk Respect Compact: Please refer to Section V in your student handbook and Dean of Students' website (http://www.uncw.edu/stuaff/doso/) about Academic Honor Code for the definition and procedures about academic dishonesty offenses. The Seahawk Respect Compact (http://www.uncw.edu/diversity/src.html) expresses the core values essential to an open, respectful learning and working environment.

Disability Services: If you have a disability and require accommodations for this course, you need to inform me of this 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 Westside Hall (EXT. 2-7555) and obtain a copy of your Accommodation Letter. YOU MUST PROVIDE A COPY TO ME. You should then meet with me, as soon as possible, to make mutually agreeable arrangements based on the recommendations of the Accommodation Letter and resources available. YOU ARE RESPONSIBLE FOR ADHERING TO THE REQUIREMENTS

AND PROCEDURES OUTLINED FOR YOU. More information and resources are available at **http://www.uncw.edu/stuaff/disability/.**

The UNCW Statement on Diversity in the University Community: As an institution of higher learning and excellence, the University of North Carolina Wilmington represents a rich diversity of human beings among its faculty, staff, and students and is committed to maintaining a campus environment that values that diversity. Accordingly, the university supports policies, curricula, and co-curricular activities that encourage understanding of and appreciation for all members of its community and will not tolerate any harassment or disrespect for persons because of race, gender, age, color, national origin, ethnicity, creed, religion, disability, sexual orientation, political affiliation, marital status, or relationship to other university constituents.

Zero Tolerance Policy: UNCW practices a zero tolerance policy for violence and harassment of any kind. For emergencies contact UNCW CARE at 962-2273; Campus Police at 962-3184; or Wilmington Police at 911. For University or community resources visit: **http://www.uncw.edu/safe-relate/campusResources.htm**. Violence prevention information and resources are available at **http://www.uncw.edu/safe%2Drelate/**.

Cell Phones, PDAs, Laptops: Please silence your cell phone and do not make calls, access applications or text during class. If you have a personal, urgent matter for which you need to be on call, please let me know in advance and/or quietly step outside. In addition, please do not have any PDAs or laptops/netbooks/iPads, etc. open or powered on during lectures.

Review Session(s) by T.A. : To be announced.

THE UNIVERSITY LEARNING CENTER **Web address: www.uncw.edu/ulc**
DePaolo Hall 1056 & 1003, 1st floor **Tel:** 910.962.7857

The University Learning Center's (ULC) mission is to help students become successful, independent learners. Tutoring at the ULC is NOT remediation: the ULC offers a different type of learning opportunity for those students who want to increase the quality of their education. ULC services are free to all UNCW students and include the following:

- Learning Services
- Math Services
- Study Skills
- Writing Services.

The ULC's hours are shorter at the beginning of the semester, during exams, and during the summer, but typically the ULC is open.

Emergency Hotline: (910) 962-3991 or toll free (888) 657-5751

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Daily Schedule

{1} Jan. 12—Jan. 16	**1.1/2.1**
{2} Jan. 19— Jan. 23	**MLK Day 2.4/2.5** [Tuesday: Last day to add/drop]
{3} Jan. 26 — Jan. 30	**3.1/3.2**
{4} Feb. 2 — Feb. 6	**3.3/3.4**
{5} Feb. 9 — Feb. 13	**3.4/4.1 Review**
{6} Feb. 16 — Feb. 20	**Exam I [Sections 1.1 – 3.4], 4.2**
{7} Feb. 23 — Feb. 27	**4.3/4.4** [Friday: Last day to withdraw]
{8} Mar. 2 — Mar. 6	**4.5/5.1/5.2**
{9} Mar. 9 — Mar. 13	**Spring Break**
{10} Mar. 16 — Mar. 20	**5.3/5.4, Review**
{11} Mar. 23 — Mar. 27	**Exam II [Sections 4.1 – 5.2], 6.1**
{12} Mar. 30 — Apr. 3	**6.2, No class on Thursday**
{13} Apr. 6 — Apr. 10	**6.4/7.1**
{14} Apr. 13 — Apr. 17	**7.2/7.3, Review**
{15} Apr. 20 — Apr. 24	**Exam III [Sections 5.3 – 7.2], 7.4**
{16} Apr. 27 — Apr. 29	**7.4/7.5, Review for Final Exam**
{19} May 7 -- Thursday	**11:30am-2:30pm [Final Exam]**

- Incorporate Sections 2.2, 2.3, 3.5, 6.5.
- It may be subject to minor changes.