Syllabus

MATH 1431, version 2.0

Effective: November 2024

MATH 1431—Calculus with Business and Economic Applications

Course Description: Differential and integral calculus of algebraic, logarithmic and exponential functions; applications to business and economics such as maximum-minimum problems, marginal analysis and exponential growth models.

Textbooks and Other Materials

Students enrolling in ODL courses are *required* to follow the textbook ordering information provided in the syllabus and Getting Started module of the course. ODL is *not responsible* for student purchases that result in *the receipt of the wrong materials. It is the responsibility of the student to* order the correct textbook materials. Courses are written to specific textbook editions; edition substitutions *are not allowed*.

MyMathLab Access with eText

Raymond Barnett, Michael Ziegler, and Karl Byleen. *MyMathLab with Pearson eText for Calculus for Business, Economics, Life Sciences & Social Sciences.* Fourteenth edition. Boston, MA: Pearson Education, Inc., 2019.
ISBN-13: 978-0-134-85695-7

Notice: This is an eText accessible only through MyMathLab. You will be presented with a choice for 18-week access or 24-month access. Please select the 24-month access, as it will cover your entire enrollment period.

Access to the eText and MyMathLab can be purchased from the publisher's website at http://www.mypearsonstore.com/ (enter the ISBN to search) or from the MyLab site, http://www.pearsonmylabandmastering.com/.

If you choose to purchase access from the MyMathLab site, follow the instructions listed in the "Ordering Information" section below, or the "Materials" section in Moodle.

Ordering Information

Steps for Purchasing Access to MyMathLab Course and eText

To purchase access from the MyMathLab site, follow these steps:

1. Go to http://www.mymathlab.com.

2. On the home screen, click "Student" in the sign-in/registration box.
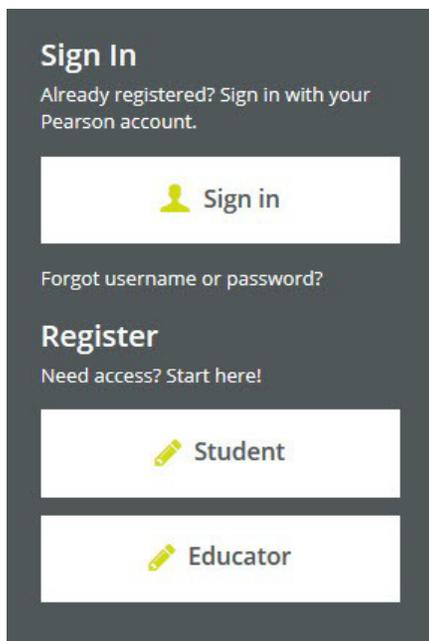
3. On the next screen, you will click "Register now." Make sure that you have the three things required to register successfully: an e-mail address, your course ID, and either an access code (purchased prior) or a credit card or Pay Pal account (if you do not already have a code). Your Course ID for this course can be found in the Getting Started module and the Materials link on the course Moodle page.

4. On the next screen, you will see the name of the course listed in the "Your Course" box on the right side of the screen. It should read **LSU ODL - MATH 1431 2.0.(4)**, taught by "LSU ODL." Disregard the course end date. At this point, you should create a Pearson account. Once you complete the registration steps, you will have a choice between using a previously purchased access code (see below) and purchasing access with a credit card or PayPal.

Please review the following tips for ordering your course materials:

1. Do not purchase your textbooks until your enrollment is approved. During the processing period, a new section may be opened that could require a different

textbook or edition.

2. *Always order by the ISBN*. Publishers and vendors often offer the same textbook title under different ISBNs. You must have the correct ISBN to access your online website.

3. If you are having problems locating a textbook, contact us at Answers@outreach.lsu.edu for assistance.

Other Materials and Resources

Calculator

A non-graphing calculator with logarithmic and exponential capabilities is required. The TI-30XIIS or the TI-30XIIB with a two-line display is preferred. Graphing calculators are not allowed on exams. No calculators on mobile phone devices are permitted.

Software: Web Browser, Adobe Acrobat Reader

It is recommended that you use Mozilla Firefox or Google Chrome as your web browser. Internet Explorer is not compatible with your Moodle course site.

Adobe Acrobat Reader is required to view PDF document files.

Hardware: Web cam with a microphone (built-in or external), headphones or working speakers, and high speed internet

Proctored exams are completed online and require the hardware listed above. Students are encouraged to review the technical requirements provided on the ProctorU website and to perform a test on their equipment prior to enrolling in this course to make sure they have the necessary resources available. There is a separate charge for each proctored exam.

Technical Requirements: https://support.proctoru.com/hc/en-us/articles/115011772748- Equipment-Requirements

Equipment Test: http://www.proctoru.com/testitout/

Nature and Purpose of the Course

Course Outcomes. Upon completion of this course, students are expected to be able to:

1. Solve business application problems using differential and integral calculus
2. Solve applications involving revenue, cost, and profit functions
3. Solve maximum-minimum problems
4. Solve business problems using marginal analysis

Mathematics 1431 is an introduction to calculus and its applications to business and economics. It is assumed you have completed a college-level algebra course. The material to

be covered will be differential and integral calculus of algebraic, logarithmic, and exponential functions. The objective of this course is to familiarize you with the powerful tools of calculus and to enable you to apply these tools to solve business and economic problems. In addition, this course will prepare you for higher-level calculus-based business and economics courses. A review of college algebra is strongly advised. This is a problem-solving course. The proofs of theorems, while they may be enlightening, need not be learned.

Integrated Learning Core

Integrated learning allows students to make simple connections among ideas and experiences and across disciplines and perspectives. The LSU Integrative Learning Core (ILC) curriculum is designed to develop student abilities to transfer their learning to new situations and demonstrate a sense of self as a learner. A fundamental goal of the ILC is to foster students' practical and intellectual capacities associated with integrative learning in preparation for high competence and functionality in their post-baccalaureate careers. This course fulfills the Louisiana Board of Regents (BoR) Area of Mathematical/Analytical Reasoning and provides students experience with the ILC proficiency of Quantitative Literacy. The BoR Common Course name and number for this course is CMAT 2103 Applied Calculus.

Working with the Course Materials

Remember, this course covers an entire semester of work or the equivalent of a classroom course lasting 15 weeks. That means that each module in this course equals nearly a week of course work and will require the same time and effort on your part. *Do not expect to complete each module in a single study session. Understand, too, that if you choose to submit assignments at a very high pace, your instructor may not be able to grade your work at the same rate.*

Each module contains information, activities, and assignments organized under a consistent series of headings. Get familiar with how the module is organized. Each module in this course is organized into the following sections: the Module Learning Objectives, the Lecture Material, graded Module Assignment(s), and a graded Quiz. You should work through these parts of the module in order. Some modules feature video example problems and solutions in addition to the written lecture notes. Specific recommendations are provided in a link to the course module instructions, which you should review before beginning the first module.

This course requires students to complete activities in both Moodle and in Pearson's MyMathLab. All assignments, quizzes, and exams will be completed online using MyMathLab. For more information please see the "Module Assignments" section of this syllabus

MyMathLab Learning Aids

Help Me Solve This

The "Help Me Solve This" feature provides an exercise that matches exactly the current iteration of the homework exercise. It is interactive and requires feedback from you throughout parts of the solution process. After completing the "Help Me Solve This" and getting or being given the correct answer, you will be returned to the exercise page, but you will get a different iteration of that exercise to work. The skill being practiced will be the same, but the values and the answers will change.

View an Example

The "Help Me Solve This" feature provides you with a static example similar to the current iteration of the homework exercise. You can progress through the solution without giving input using the Continue button at the bottom. When you close that window, you will be returned to the original homework exercise.

Suggested Study Techniques

1. Carefully review the module objectives to help you focus on the information that will be covered on the exams.
2. Concentrate on the reading assignments, the module lecture material, and any additional resources provided. This review should include a detailed examination of any illustrative problems and examples. After an assignment has been completed, a rapid re-reading of the related text and other materials is strongly recommended.
3. Put yourself on a definite schedule. Set aside a certain block of hours per day or week for this course and work in a place where distractions are minimal.
4. Try to submit one assignment each week or at least every two weeks. Delays in submitting assignments usually result in lagging interest and the inability to complete the course.
5. Review your module assignments after they have been graded, paying special attention to any instructor feedback provided.
6. Regardless of how you complete your graded assignments, keep in mind that module completion should not be your sole preparation for your exams. As with any college course, you should study for your exams.

Reading Assignments

To do well in this course, it is essential that you read and study the eText before attempting the module assignments. Specific information on reading assignments will be given in each module.

Written lecture material is posted in Moodle for each module covered in the course. The lecture PDFs contain definitions, rules, procedures, and common mistakes made by students, as well as examples and solutions.

You will read an average of 10 pages per module. Specific reading assignments will be given in each module.

Topic Outline

This course covers the following specific topics:

Module	Topic
01	Functions; Linear and Quadratic Functions; Polynomial and Rational Functions
02	Introduction to Limits
03	Infinite Limits and Limits at Infinity
04	Continuity
05	The Derivative
06	Basic Differentiation Properties; Marginal Analysis in Business and Economics
07	The Constant e and Continuous Compound Interest; Derivatives of Exponential and Logarithmic Functions
08	Derivatives of Products and Quotients; The Chain Rule
	Mid- Course Examination
09	Elasticity of Demand; First Derivative and Graphs
10	Second Derivatives and Graphs
11	Absolute Maxima and Minima; Optimization
12	Antiderivatives and Indefinite Integrals
13	Integration by Substitution
14	The Definite Integral; The Fundamental Theorem of Calculus
15	Area between Curves; Applications in Business and Economics
	Final Examination

Graded Assignments

Each module contains one or more graded module assignment related to sections in the eText along with a quiz on that content. You should complete the module assignment(s), making sure that you can work each exercise on your own, then take the quiz. The goal of the quiz is to be able to make a 100% without any assistance.

Module Assignments

Module assignments can be found under the "Homework" tab in MyMathLab. You should review the module lecture notes and read the eText before attempting the assignment. When working your assignments, you should save after completing each exercise.

If you rely on the MyMathLab learning aids or other help to get a Skill Check, Standard, Step-by-Step, or Brief Exercise correct, then use the Similar Exercise feature and rework the exercise repeatedly until you can get it correct without any help. This is essential. Many students who become overly dependent on the learning aids or other assistance to get a score of 100% on the module assignment find that they score much lower on the exams. You are permitted ten attempts per assignment.

Assignment Verification: Getting Credit for Your Assignment

When you have completed a module assignment in MyMathLab, you must also submit the corresponding assignment verification in Moodle. This sends a notice to your instructor that you have completed the assignment in MyMathLab and the grade can be transferred to the Moodle gradebook. You can review your completed assignments in the Gradebook in MyMathLab.

To submit the module assignment verification in Moodle, click on "Module XX: Section XX Assignment Verification" in the module and follow the instructions given there.

Quizzes

You should master your module assignments before attempting the quizzes, and you should try to do the quizzes without any help. If you rely on help to get a 100% on the quizzes, you will score much lower on the exams.

Each quiz contains questions drawn from a pool of module assignment exercises having the same or similar learning objectives. Each quiz in MyMathLab can be attempted up to five times, but only the highest score of your attempts for each quiz will be recorded in Moodle to be used in the course grade. The maximum working time allowed for each attempt of each quiz is 75 minutes. While working on a quiz with time remaining, you can close the browser (rather than choosing Submit) and re-open that same quiz later without any additional elapsed time.

You will not get feedback after each exercise answer is entered. You must work through the quiz and submit it before seeing your score. You can review your quiz in the gradebook in MyMathLab, and the MML learning aids will appear for the review.

Quizzes should be used as preparation for the exams. Re-take the quizzes until you can do the work correctly without any assistance.

Quiz Verification

Just as you do with the module assignments, when you have completed a quiz in MyMathLab, you must also submit a quiz verification in Moodle. Go to Moodle and click on "Module XX Quiz Verification" and follow the instructions.

Quiz Collaboration

You are allowed to consult with other people regarding math concepts but not regarding specific answers to questions. You may discuss the concepts demonstrated in the quizzes, but do not share or assist another student in deriving an answer. Your work must be independently written and entered into MyMathLab. You are prohibited from using any additional online or third-party resources that are not explicitly listed in the syllabus or provided by your instructor.

Permission to Take the Final Exam

You must have a *grade posted in the Moodle grade book for the Module 15 assignment and quiz in order to unlock access to the Final Exam.* Please allow at least *seven* days for the final assignment grade to be posted in the gradebook. Understand that occasional delays will occur, such as during holidays and semester breaks or if you submit several module assignments within the same week. You must have been enrolled in the course for *at least three weeks*, regardless of when the modules and other exams are completed.

Academic Integrity

Students in Online Distance Learning (ODL) courses must comply with the *LSU Code of Student Conduct.* Suspected violations of the academic integrity policy may be referred to LSU Student Advocacy & Accountability (SAA), a unit of the Dean of Students. If found responsible of a violation, you will then be subject to whatever penalty SAA determines and will forfeit all course tuition and fees.

Plagiarism

Students are responsible for completing and submitting their own course work and preparing their own modules. All work submitted in the course modules must be the student's own work unless outside work is appropriate to the assignment; all outside material must be properly acknowledged. It is also unacceptable to copy directly from your textbook or to use published answer keys or the teacher's edition of a textbook.

Collaboration

Unauthorized collaboration constitutes plagiarism. Collaborative efforts that extend beyond the limits approved by the instructor are violations of the academic integrity policy. Students who study together are expected to prepare and write their own individual work for submission and grading.

For more information and links to the *LSU Code of Student Conduct* and the SAA website, go to the ODL Academic Integrity policy on our website.

Examinations and Grading Policy

There will be two proctored exams to be completed in MyMathLab. The mid-course exam covers material from modules 01–08 and follows module 08. The final exam covers material from modules 09–15 and follows module 15. Each exam consists of approximately 40 multiple-choice, fill-in-the-blank, and computation-type questions.

Just like the assignments and quizzes, once you have completed your exam in MyMathLab, you must also submit your "Exam Verification" in Moodle.

The maximum time allowed is *three* hours for the exams.

Textbooks, notes, or other study aides are not permitted on exams. While testing, you are not allowed to access other online materials, including your module assignments, quizzes, and online learning aids in MyMathLab. Remember, academic dishonesty is a violation of the university Code of Student Conduct. A nongraphing, scientific calculator is allowed on exams.

Along with an approved calculator, you are allowed a blank white board during the exam. To verify the white board is blank, you must show your white board to the proctor before you begin your exam. At the end of the exam, the proctor will instruct you to wipe clean the white board; the proctor must witness you wiping clean the white board.

Practice exams are available in MyMathLab for each exam and will be open throughout the course. The practice exams do not count toward your course grade, but it is essential that you work the practice exams repeatedly until you can do the work without any help.

YOU MUST EARN A PASSING AVERAGE ON THE EXAMINATIONS IN ORDER TO PASS THE COURSE.

If you earn a passing average on the examinations, your grade will be computed as follows.

Course grade = average of module assignments + average of quizzes + exam scores. Each component is weighted by the percentages in the table below.

Course grade =

Component	Weight (%)
Average of Homework Assignments	15%
Average of Quizzes	15%
Mid-Course Exam	35%
Final Exam	35%

The following grading scale applies:

> **97%–100%**= A+
>   93%–96% = A
>   90%–92% = A-
>   87%–89% = B+
>   83%–86% = B
>   80%–82% = B-
>   77%–79% = C+
>   73%–76% = C
>   70%–72% = C-
>   67%–69% = D+
>   63%–66% = D
>   60%–62% = D-

IMPORTANT: Remember, the final exam cannot be taken until you meet the following requirements. Under no circumstances may the final exam be taken earlier.

1. You must have been enrolled in the course for *at least three weeks*, regardless of when the modules and other exams are completed.

2. You must have a *grade posted in the Moodle grade book for the module 15 assignments and quizzes in order to unlock access to the Final Exam*. Please allow at least *seven* days for the final assignment grade to be posted in the gradebook.

To read the full exam policy and other policy statements, visit http://www.outreach.lsu.edu/Extended-Campus/Online-Distance-Learning/Guidelines-Policies/Policies. Go to Continuing Education's homepage. Click on *Extended Campus* ,select *Online Distance Learning*, and then click the link for *Guidelines and Policies*.

Taking Your Examinations

You are *required* to create a Louisiana State University ODL ProctorU account and to take your examinations through ProctorU, a remote proctoring service that allows you to take exams anywhere with internet access (some restrictions apply). Information on creating your ProctorU account can be found in the *Getting Started* module. You cannot use an account created through another university, so if you already have an account, you will still need to create an account associated with LSU Online Distance Learning (ODL).

The ProctorU website provides links you can use to find out how ProctorU works and to check your computer to see that it meets the technical requirements. In addition, to test using ProctorU, you need *access to a web cam with a microphone (built-in or external), headphones*

or working speakers, and *high speed internet* to use this service. A complete list of technical requirements is available from the ProctorU website.

You should schedule your exams about a week before you are ready to take them in order to avoid any premium charges.

Transcript Information

After you have completed this course, your grade will be filed with the Office of the University Registrar. If a transcript is needed, it is your responsibility to make a request to the registrar. If you would like to order a transcript, visit the Office of the University Registrar Transcript Requests page to view your options (https://www.lsu.edu/registrar/student-services/transcript.php).

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