**Master Syllabi MATH 1425**

**MATH 1425 Business Calculus & Applications I Session (Fall/Spr/Summer Year)**

**Section # Time of class Room Number:**

**Instructor: Office Hours:**

**Office:**

**Office Phone: Other times by appointment:**

**E-mail:**

**COURSE DESCRIPTION**

**MATH 1425 BUSINESS CALCULUS AND APPLICATIONS I (4-4-0)** is a course treating standard one-variable calculus and its applications for business students, as well as selected other business applications, and an introduction to multivariable calculus. Calculus topics include the derivative, methods of finding derivatives, applications of derivatives, the integral, methods of integration, applications of integration, and the calculus of the exponential and logarithmic functions. Multivariable calculus topics include partial derivatives and finding local extrema.

**Prerequisites:** C or better in MATH 1314 or MATH 1324 or the equivalent.

**Required TEXT**: Applied Calculus with Linear Programming…MATH 1425 2/e by Barnett & Ziegler, Pearson Custom Publishing. ISBN 9781256298182 This text has the material for both Bus Calc I and II.

**Optional for student**: Student *Solutions Manual*: ISBN 9781256278443 The Student Solutions Manual material for some sections was not available, but the vast majority of the text is covered.

**Calculator**: Students need either a scientific or business calculator. If you cannot purchase one, they are available from the library. Graphing calculators are encouraged, but their use may be restricted on the graphing test. Most ACC faculty are familiar with the TI family of graphing calculators. Hence, TI calculators are highly recommended for student use.  Other calculator brands can also be used.  Your instructor will determine the extent of calculator use in your class section.

**COURSE EVALUATION/GRADING SCHEME**

**Include Your Missed Exam Policy statement**

**Homework Policy, including your policy about late work**

**Include your statement on Class Participation expectations**

**Incomplete Grade Policy:** Incomplete grades (I) will be given only in very rare circumstances. Generally, to receive a grade of "I", a student must have taken all examinations, be passing, and after the last date to withdraw, have a personal tragedy occur which prevents course completion. An incomplete grade cannot be carried beyond the established date in the following semester. The completion date is determined by the instructor but may not be later than the final deadline for withdrawal in the subsequent semester.

**Attendance/Class Participation:** Regular and punctual class attendance is expected of all students. If attendance or compliance with other course policies is unsatisfactory, the instructor may withdraw students from the class. For attendance, unsatisfactory compliance is usually 4 or more absences,

**Withdrawal Policy:** It is the responsibility of each student to ensure that his or her name is removed from the roll should he or she decide to withdraw from the class. The instructor does, however, reserve the right to drop a student should he or she feel it is necessary. If a student decides to withdraw, he or she should also verify that the withdrawal is submitted before the Final Withdrawal Date **(insert date)**. The student is also strongly encouraged to retain their copy of the withdrawal form for their records.

Students who enroll for the third or subsequent time in a course taken since Fall 2002 may be charged a higher tuition rate, for that course.

State law permits students to withdraw from no more than six courses during their entire undergraduate career at Texas public colleges or universities. With certain exceptions, all course withdrawals automatically count towards this limit. Details regarding this policy can be found in the ACC college catalog.

*Reinstatement Policy* (if applicable)

**INSTRUCTIONAL METHODOLOGY:** This course is taught in the classroom primarily as a lecture/discussion course.

**COURSE RATIONALE:** This course is a standard calculus course for business students. At ACC it is part of a two-course business calculus sequence. Business Calculus I covers one-variable calculus and some multivariable calculus. The course stresses applications in business and economics, and is intended to give business students the appropriate conceptual and computational mathematical background for future study in business.

**COMMON COURSE OBJECTIVES/LEARNING OUTCOMES:**

Students who successfully complete Business Calculus I will be able to:

1. Evaluate limits of functions from their graphs and/or formulas.
2. Analyze and apply the notions of continuity and differentiability to algebraic functions.
3. Determine derivatives for functions involving powers, exponentials, logarithms and combinations of these functions and solve business and economic applications using these derivatives.
4. Use derivatives to construct graphs of selected functions.
5. Use basic integration techniques to solve simple differential equations.
6. Demonstrate the connection between area and the definite integral.
7. Integrate selected functions and solve business and economic applications using these results.
8. Apply the Fundamental Theorem of Calculus to evaluate definite integrals.
9. Apply the concepts of limits, derivatives and integrals to solve problems involving functions unique to business applications and interpret the results.
10. Evaluate multivariable functions, determine the first-order and second-order partial derivatives, and use the second derivative test to find the local extrema for multivariable functions.

The **General Education Competency** of

1. Critical Thinking – gathering, analyzing, synthesizing, evaluating and applying information is covered in every SLO.
2. Quantitative and Empirical Reasoning – applying mathematical, logical, and scientific principles and methods is covered in every SLO.
3. Written, Oral and Visual Communication – communicating effectively adapting to purpose, structure, audience and medium is covered in SLOs # 1, 3, 4, 6, 7, and 9.

**Statement on Scholastic Dishonesty:** A student attending ACC assumes responsibility for conduct compatible with the mission of the college as an educational institution. Students have the responsibility to submit coursework that is the result of their own thought, research, or self-expression. Students must follow all instructions given by faculty or designated college representatives when taking examinations, placement assessments, tests, quizzes, and evaluations. Actions constituting scholastic dishonesty include, but are not limited to, plagiarism, cheating, fabrication, collusion, and falsifying documents. Students who violate the rules concerning scholastic dishonesty will be assessed an academic penalty that the instructor determines is in keeping with the seriousness of the offense. Penalties for scholastic dishonesty will depend upon the nature of the violation and may range from lowering a grade on one assignment to an “F” in the course and/or expulsion from the college. See the Student Standards of Conduct and Disciplinary Process and other policies at http://www.austincc.edu/current/needtoknow

**Statement on Student Discipline**

Classroom behavior should support and enhance learning. Behavior that disrupts the learning process will be dealt with appropriately, which may include having the

student leave class for the rest of that day. In serious cases, disruptive behavior may lead to a student being withdrawn from the class. ACC's policy on student

discipline can be found in the Student Handbook under Policies and Procedures or on the web at: <http://www.austincc.edu/handbook>

**Student Rights and Responsibilities:** Students at the college have the rights accorded by the U.S. Constitution to freedom of speech, peaceful assembly, petition, and association. These rights carry with them the responsibility to accord the same rights to others in the college community and not to interfere with or disrupt the educational process. Opportunity for students to examine and question pertinent data and assumptions of a given discipline, guided by the evidence of scholarly research, is appropriate in a learning environment. This concept is accompanied by an equally demanding concept of responsibility on the part of the student. As willing partners in learning, students must comply with college rules and procedures.

**Statement on Students with Disabilities:** Each ACC campus offers support services for students with documented disabilities. Students with disabilities who need classroom, academic or other accommodations must request them through Student Accessibility Services (SAS, formerly OSD).  Students are encouraged to request accommodations when they register for courses or at least three weeks before the start of the semester, otherwise the provision of accommodations may be delayed.

Students who have received approval for accommodations from SAS for this course must provide the instructor with the ‘Notice of Approved Accommodations’ from SAS before accommodations will be provided.  Arrangements for academic accommodations can only be made after the instructor receives the ‘Notice of Approved Accommodations’ from the student.

Students with approved accommodations are encouraged to submit the ‘Notice of Approved Accommodations’ to the instructor at the beginning of the semester because a reasonable amount of time may be needed to prepare and arrange for the accommodations.

Additional information about Student Accessibility Services is available at <http://www.austincc.edu/support/osd/>

**Safety Statement:** Austin Community College is committed to providing a safe and healthy environment for study and work. You are expected to learn and comply with ACC environmental, health and safety procedures and agree to follow ACC safety policies. Additional information on these can be found at <http://www.austincc.edu/ehs>. Because some health and safety circumstances are beyond our control, we ask that you become familiar with the Emergency Procedures poster and Campus Safety Plan map in each classroom. Additional information about emergency procedures and how to sign up for ACC Emergency Alerts to be notified in the event of a serious emergency can be found at: http://www.austincc.edu/emergency/

Note, you are expected to conduct yourself professionally with respect and courtesy to all. Anyone who thoughtlessly or intentionally jeopardizes the health or safety of another individual will be dismissed from the day’s activity, may be withdrawn from the class, and/or barred from attending future activities.

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**Use of ACC email:** All College e-mail communication to students will be sent solely to the student’s ACCmail account, with the expectation that such communications will be read in a timely fashion. ACC will send important information and will notify you of any college related emergencies using this account. Students should only expect to receive email communication from their instructor using this account. Likewise, students should use their ACCmail account when communicating with instructors and staff. Instructions for activating an ACCmail account can be found at http://www.austincc.edu/accmail/index.php

**Testing Center Policy:** Under certain circumstances, an instructor may have students take an examination in a testing center. Students using the Academic Testing Center must govern themselves according to the Student Guide for Use of ACC Testing Centers and should read the entire guide before going to take the exam. To request an exam, one must have:

ACC Photo ID (info at : <http://www.austincc.edu/support/admissions/student_id.php>)

1. Course Abbreviation & Number (e.g., MATH 1425)
2. Course Section (e.g., 005)
3. Course Synonym (e.g., 10123)
4. Instructor's Name

Do NOT bring cell phones to the Testing Center. Having your cell phone in the testing room, **regardless of whether it is on or off**, will revoke your testing privileges for the remainder of the semester. ACC Testing Center policies can be found at http://www.austincc.edu/testctr/

# **Student and Instructional Services:** Sometimes sections of MATH 0163(1-0-2) are offered**.** The lab is designed for students currently registered in Business Calculus and Applications I, MATH 1425. It offers individualized and group setting to provide additional practice and explanation. This course is not for college-level credit. Repeatable up to two credit hours. Students should check the course schedule for possible offerings of the lab class*.*

ACC strives to provide exemplary support to its students and offers a broad variety of opportunities and services. Information on these services and support systems is available at http://www.austincc.edu/s4/

Links to many student services and other information can be found at <http://www.austincc.edu/current/>

ACC Learning Labs provide **free** **first-come, first-serve tutoring** services to all ACC students currently enrolled in the course to be tutored. The tutor schedule for each Learning Lab may be found at: http://www.autincc.edu/tutor/students/tutoring.php

For help setting up your ACCeID, ACC Gmail, or ACC Blackboard, see a Learning Lab Technician at any ACC Learning Lab: <http://www.austincc.edu/tutor/locations.php>

**COURSE OUTLINE/CALENDAR for Business Calculus I, MATH 1425**

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| --- | --- | --- |
|  | **16 Week Semester** | **11 Week Semester** |
| **Week** | **Sections** | **Sections** |
| 1 | Intro 6.1, 1.1 | 6.1, 1.1, 1.2 |
| 2 | 1.2-1.3, | 1.3, 1.4, 1.5, 6.2 |
| 3 | 1.4, 1.5, 6.2 | 1.6, 1.7, Test, , Appendix , 2.1 |
| 4 | 1.6, 1.7, Test | 2.2,2.3, 2.4 |
| 5 | 2.1- 2.3 and 6.2 | 2.5,2.6 , 2.7 |
| 6 | 2.4, 2.5 | Test, 3.1-3.2, 3.4 |
| 7 | 2.6, 2.7 | 6.2, 3.5,3.6 |
| 8 | Test, 3.1 | Test, 4.1-4.2 |
| 9 | 3.2, 3.4, and 6.2 sec. order partials | 4.2-4.4 |
| 10 | 3.5,3.6 | 4.5, 5.1 |
| 11 | 6.3, Test | 5.2, Review, Final Exam |
| 12 | 4.1, 4.2 |  |
| 13 | 4.3, 4.4 |  |
| 14 | 4.5, 5.1 |  |
| 15 | Test, 5.2 |  |
| 16 | Review & Comprehensive Exam |  |

***Please note: Schedule changes may occur during the semester. Any changes will be announced in class.***