

CLARENDON COLLEGE
DIVISION OF SCIENCE AND HEALTH OPERATIONS
MATHEMATICS
ADJUNCT FACULTY
CALCULUS I SYLLABUS
DUAL CREDIT WITH HIGH SCHOOL CALCULUS
FALL SEMESTER, 2011
AUGUST 22 – DECEMBER 16
MONDAY THROUGH FRIDAY
1:58 pm – 2:43 pm (7th Period)
SHAMROCK ISD HIGH SCHOOL, ROOM 4

INSTRUCTOR: Ms. Miranda

COURSE INSTRUCTION AND TUTORING: Shamrock ISD High School, Room 4
Help from the instructor will be available in Room 4 from **7:45 – 8:20** am and after school from **3:35 - 4:30** pm if requested.

ONLINE TECHNOLOGY SUPPORT AND HELP: www.mathgraphs.com,
www.college.hmco.com, and www.matharticles.com

SCHOOL OFFICE PHONE: (806) 256-2241 CLARENDON: 1-800-687-9737

TEXTBOOK: *CALCULUS, Eighth Edition*
By Ron Larson, Robert P. Hostetler, and Bruce H. Edwards
Houghton Mifflin Company, 2006

COURSE DESCRIPTION: **Calculus I, Math 2413**, consists of instruction in limits and continuity of functions, techniques of differentiation, applications of the derivative and antidifferentiation. Prerequisite: **Math 1314, Math 1316, or consent of instructor.**

METHODS OF INSTRUCTION: Instructional delivery will consist of lecture, demonstrations, and guided instruction of students at the board.

STATEMENT OF PURPOSE: **Calculus I, Math 2413**, partially satisfies the requirements for the Associates degree at Clarendon College and is designed for transfer to a senior college.

REQUIREMENTS FOR STUDENTS WHO WILL BE SENIORS DURING THE 2011-2012 SCHOOL YEAR MAY BE MET IN ANY ONE OF THE FOLLOWING WAYS:

- 1) **Meeting requirements through prior enrollment in a college course:**
Any student who has been enrolled in a college course through Clarendon and has made at least a C in the course has met the testing requirement for any other course IN THAT AREA (Reading-based or Math-based).

WARNING: COMPOSITION AND RHETORIC IS NOT A READING-BASED COURSE. IT IS A WRITING COURSE.

- 2) **Meeting requirements through TAKS (11th grade test):**
To be enrolled in a reading-based course a student must make a scale score of at least 2200 on the English Language Arts (ELA) portion of the TAKS test with a score of at least 3 on the essay.

To be enrolled in a math-based course, a student must make a scale score of at least 2200 on the mathematics portion of the TAKS test.

NOTICE: If you meet the requirements based on your 10th grade scores but not on your 11th grade scores, TAKS may not be used to meet the testing entrance requirements.

- 3) **Meeting requirements through ACCUPLACER:**
This is offered at Clarendon College periodically and at Amarillo College on a daily basis. Students may take only the part needed. Results are available immediately. Call the college to check on the cost and to set up an appointment for testing.
Clarendon College (806) 256-3571 Amarillo College (806) 371-5445

COURSE OBJECTIVES AND COURSE OUTLINE: Upon successful completion of **Calculus I, Math 2413**, students should be able to master:

CALCULUS

Chapter 1, LIMITS AND THEIR PROPERTIES

- 3 **Section 1.1, A Preview of Calculus,**
Page 47, Exercises 5,6,10a
- 23 **Section 1.2, Finding Limits Graphically and Numerically,**
Page 54, Exercises 9-24 all, 35,37,41,49-52 first two questions only, discuss 25,26 Bonus 75,76
- 31 **Section 1.3, Evaluating Limits Analytically,**
Page 67, Exercises 3-87 by 3's,89,93
- 26 **Section 1.4, Continuity and One-Sided Limits,**
Page 78, Exercises 3-54 by 3's,69-72 all,79-85 odds
- 22 **Section 1.5, Infinite Limits,**
Page 88, Exercises 1-4 all,9-27 by 3's,29-32 all,33-51 by 3's

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Chapter 2, DIFFERENTIATION

- 18 Section 2.1, *The Derivative and the Tangent Line Problem,*
Page 103, Exercises 1,2,3-42 by 3's,71,72, discuss 81-90
- 23 Section 2.2, *Basic Differentiation Rules and Rates of Change,*
Page 115, Exercises 3-60 by 3's,61,93,95
- 32 Section 2.3, *Product and Quotient Rules and Higher Order Derivatives,*
Page 126, Exercises 3-75 by 3's,93-101 odds,115,117
- 24 Section 2.4, *The Chain Rule,*
Page 137, Exercises 3-72 by 3's
- 16 Section 2.5, *Implicit Differentiation,*
Page 146, Exercises 3-30 by 3's,45-53 odds,59
- 14 Section 2.6, *Related Rates,*
Page 154, Exercises 5,8,18-24 all,27,30,31,33,45

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Chapter 3, APPLICATIONS OF DIFFERENTIATION

- 18 Section 3.1, *Extrema on an Interval,*
Page 169, Exercises 1,2,3-33 odds
- 10 Section 3.2, *Rolle's Theorem and the Mean Value Theorem,*
Page 176, Exercises 1,5,9,11,13,33,37,39-41 odds
- 10 Section 3.3, *Increasing and Decreasing Functions and the First Derivative Test,*
Page 186, Exercises 1,3,5,9,20-45 by 5's
- 9 Section 3.4, *Concavity and the Second Derivative Test,*
Page 195, Exercises 1,5,15-40 by 5's,67
- 18 Section 3.5, *Limits at Infinity,*
Page 205, Exercises 3-8 all,17-33 odds,55,59,67
- 9 Section 3.6, *A Summary of Curve Sketching,*
Page 215, Exercises 1-4 all,7,9,11,17,25
- 10 Section 3.7 *Optimization Problems,*
Page 223, Exercises 2bcd,4,5,9,11,13,15,19,21c,27
- 4 Section 3.8, *Newton's Method,*
Page 233, Exercises 1,3,5,10

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Chapter 4, INTEGRATION

- 18 Section 4.1, *Antiderivatives and Indefinite Integration,*
Page 255, Exercises 3-42 by 3's,55-60 W2S2
- 14 Section 4.2, *Area,*
Page 267, Exercises 3-42 by 3's
- 16 Section 4.3, *Riemann Sums and Definite Integrals,*
Page 278, Exercises 13-44 W2S2
- 29 Section 4.4, *The Fundamental Theorem of Calculus,*
Page 291, Exercises 1-50 W2S2,81-84
- 27 Section 4.5, *Integration by Substitution,*
Page 304, Exercises 3-36 by 3's,45-81 by 3's,101,105

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Chapter 5, LOGARITHMIC, EXPONENTIAL, AND OTHER TRANSCENDENTAL FUNCTIONS

- 31 Section 5.1, *The Natural Logarithmic Function: Differentiation*,
Page 329, Exercises 3-10 all, 18-84 by 3's
- 19 Section 5.2, *The Natural Logarithmic Function: Integration*,
Page 338, Exercises 3-42 by 3's, 48, 51, 61, 62, 67 Note page 336, Example 9
- 9 Section 5.3, *Inverse Functions*,
Page 347, Exercises 1-15 odds, 29
- 18 Section 5.4, *Exponential Functions: Differentiation and Integration*,
Page 356, Exercises 1-13 odds, 36-45 by 3's, 87-105 by 3's
- 12 Section 5.7, *Inverse Trigonometric Functions: Integration*,
Page 385, Exercises 3-36 by 3's

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Chapter 7, APPLICATIONS OF INTEGRATION

- 12 Section 7.1, *Area of a Region Between Two Curves*,
Page 452, Exercises 1-6 all, 20-45 by 5's
- 7 Section 7.2, *Volume: The Disk Method*,
Page 463, Exercises 1-13 odds
- 6 Section 7.3, *Volume: The Shell Method*,
Page 472, Exercises 1-11 odds
- 6 Section 7.4, *Arc Length and Surfaces of Revolution*,
Page 483, Exercises 3, 5, 7, 39, 41, 55

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Chapter 8, INTEGRATION TECHNIQUES, L'HOPITAL'S RULE AND IMPROPER INTEGRALS

- 22 Section 8.1, *Basic Integration Rules*,
Page 522, Exercises 15-49 odds, 61-67 odds
- 16 Section 8.2, *Integration by Parts*,
Page 531, Exercises 3-39 by 3's (not 33), 48, 50, 53, 55
- 14 Section 8.3, *Trigonometric Integrals*,
Page 540, Exercises 3-18 by 3's, 25-40 by 5's, 55-70 by 5's
- 10 Section 8.4, *Trigonometric Substitution*,
Page 549, Exercises 5-50 by 5's
- 6 Section 8.5, *Partial Fractions*,
Page 559, Exercises 5-30 by 5's
- 9 Section 8.7, *Indeterminate Forms and L'Hopital's Rule*,
Page 574, Exercises 12-36 by 3's

INSTRUCTIONS FOR STUDENTS TO VIEW GRADES ON-LINE:

Go to the Clarendon College website (www.clarendoncollege.edu) and click on the Student Portal.

CLASS POLICIES AND GRADING POLICIES:

- ❖ **Pencils must be used! (No ink pens are allowed.)**
- ❖
- ❖ **All homework assigned will be handed in.**
- ❖
- ❖ **In the class section in which the homework is due the student will study the homework for 10 minutes and then hand it to the instructor.**
- ❖
- ❖ **A quiz of 7 to 10 problems from the homework will be given.**

- ❖ **The homework will add 5 points to the quiz grade if it is at least 70% completed.**

- ❖ **Grades will be taken from the homework quizzes, chapter tests, and memory tests.**

- ❖ **Tests are worth 40% and daily work is worth 60% of the grade.**

- ❖ **No six weeks tests will be given.**

- ❖ **Tests and homework quizzes must be made up within five days of an absence.**

CLARENDON'S CLASSROOM CONDUCT POLICIES: Failure to comply with lawful direction of a classroom instructor is a disruption for all students enrolled in the class. Cheating violations include, but are not limited to: (1) obtaining an examination, classroom activity, or laboratory exercise by stealing or collusion; (2) discovering the content of an examination, classroom activity, laboratory exercise, or homework assignment before it is given; (3) using an unauthorized source of information during an examination, classroom activity, laboratory exercise, or homework assignment; (4) entering an office or building to obtain unfair advantage; (5) taking an examination for another person; (6) completing a classroom activity, laboratory exercise, homework assignment, or research paper for another person; (7) altering grade records; (8) using any unauthorized form of electronic communication device during an examination, classroom activity, or laboratory exercise; (9) Plagiarism. Plagiarism is the using, stating, offering, or reporting as one's own, an idea, expression, or production of another person without proper credit. Disciplinary actions for cheating in a course are at the discretion of the individual instructor. The instructor of that course will file a report with the Dean of Students when a student is caught cheating in the course, whether it be a workforce or academic course. The report shall include the course, instructor, student's name, and the type of cheating involved. Students who are reported as cheating to the Dean of Students more than once shall be disciplined by the Dean. The Dean will notify all involved parties within fourteen days of any action taken.

CLARENDON'S ACCOMMODATIONS STATEMENT: Clarendon College provides reasonable accommodations for persons with temporary or permanent disabilities. Should you require special accommodations, notify the Office of Student Services [(806) 874-3571 or (800) 687-9737]. We will work with you to make whatever accommodations we need to make.

CLARENDON'S WITHDRAWAL PROCEDURE: When a student finds it necessary to withdraw from school before the end of the semester, he or she should obtain a withdrawal form from the Office of Student Services. Full instructions for withdrawing from college will be given at the time the withdrawal form is picked up. Students may also withdraw from the college by sending a written request for such action to the Registrar's Office. The request must include the student's signature, the student's current address, social security number, phone number, and course names and numbers of the courses for which the student is currently enrolled. The date postmarked on the envelope will be the official withdrawal date. Students who withdraw after the census date for the semester and on or before the end of the 12th week of a long semester, or on or before the last day to drop a class of a term as designated in the college calendar will be assigned a grade of "W."

Any change in a student's class schedule after registration and prior to the census date of the semester is accomplished by completing the official Add/Drop Form. Students must pay a change-of-schedule fee plus any applicable tuition and fees to the Business Office if they wish to add or drop a course during this period of time. No course(s) may be added after the date designated by the school calendar as the last date to add a course.

Clarendon College, as soon as practicable, shall refund tuition and mandatory fees collected for courses from which the student drops or withdraws. (The indicated percentages are applied to the tuition and mandatory fees collected for each course from which the student is withdrawing.) Any student officially withdrawing from Clarendon College before the first day classes of any semester will be assessed a \$15 matriculation fee. (Class days refers to the number of calendar days the institution normally meets classes, not the days a particular course meets.) For semester-length courses for which semester credit hours are awarded: (1) 100% refund is to be made for courses dropped prior to the first class day. (2) During the fall or spring semester or comparable trimester i) during the first fifteen class days, 70% ii) during the sixteenth through twentieth class days, 25% iii) after the twentieth class day, none.

The last day to register or add/drop a class this semester is Friday, September 9, 2011, and the last day to drop a class with a "W" this semester is Friday, November 18, 2011.