South Plains College
Mathematics Department
Calculus I – MATH 2413
Course Syllabus
Spring 2017

Instructor: Jay Driver
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Office Hours: MW 10:45-11:30pm, 4:35-5:00pm (Levelland)
TR 2:00-3:30pm (Reese Center)
F 9:00-12:00 (Levelland)
And by appointment!

Course Description: MATH 2413. CALCULUS I. (4:3:2) Prerequisite: MATH 1314 and MATH 1316 (or concurrent enrollment in MATH 1316) or MATH 2412. Topics include functions, limits, continuity, differentiation of algebraic functions, applications of the derivative, differentials, indefinite integrals, definite integrals and applications of definite integrals. (copied from the current SPC catalog)

Textbook: Larson, R., Edwards, B.H. (2014). Calculus, Tenth Edition. Boston, MA: Brooks/Cole Cengage Learning. ISBN 978-1-285-05709-5.

The following statements are considered at South Plains College to be **Core Objectives**, which are embedded into the curriculum of this course.
Communication Skills:
- Develop, interpret, and express ideas through written communication
- Develop, interpret, and express ideas through oral communication
- Develop, interpret, and express ideas through visual communication

Critical Thinking:
- Generate and communicate ideas by combining, changing, and reapplying existing information
- Gather and assess information relevant to a question
- Analyze, evaluate, and synthesize information

Empirical and Quantitative Competency Skills:
- Manipulate and analyze numerical data and arrive at an informed conclusion
- Manipulate and analyze observable facts and arrive at an informed conclusion

Course Objectives: Upon completion of this course, mastery of the following objectives should be met by the student. Chapter and section numbers are indicated in parentheses.
1. Find limits of functions (graphically, numerically and algebraically) (1.2, 1.3, 1.4, 1.5, 3.5).
2. Analyze and apply concepts of continuity and differentiability to functions (1.4, 2.1).
3. Find and evaluate derivatives of functions using standard derivative rules including implicit differentiation (2.1, 2.2, 2.3, 2.4, 2.5).
4. Analyze and sketch graphs of functions using limits and derivatives (3.1, 3.2, 3.3, 3.4, 3.6).
5. Apply derivative rules to solve problems involving rates and optimization (2.6, 3.7).
6. Use basic techniques of integration to find antiderivatives (4.1, 4.3, 4.4, 4.5).
7. Evaluate definite integrals using numerical methods (4.6).
8. Apply the concepts of integration to solve problems involving area, volumes of revolution, lengths of curves, surface area, center of mass, work, and fluid pressure (4.2, 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7).

Attendance: Attendance and effort are the most important activities for success in this course. Class attendance may be taken at any time during the class period, so please do not arrive late or leave early.

You may be dropped from this course with a grade of X or F if you are absent four consecutive classes or if you exceed six absences throughout the semester. Be on time and silence any cell phones before entering the classroom.

Assignments & Grading: Homework assignments will be made at each class meeting. Quizzes may be administered at any time. Keep all class materials (notes, handouts, homework, quizzes, and exams) organized in a notebook (3-ring binder). These materials are subject to be turned in for grading at any time. Please make certain all materials accompany you to each class meeting. No late assignments will be accepted. Daily work (homework, quizzes, notebook) will count for 20% of the final grade, while all exams count for 80% of the final grade. Expect four major exams (15% each) throughout the course and a cumulative final exam (20%) at the end of the course. Your final average in the course will determine the letter grade posted on your transcript. This grade is determined by the following scale: A (90-100%), B (80-89%), C (70-79%), D (60-69%), F (0-59%).

Supplies: You will need a scientific or graphing calculator, graph paper, and a 3-ring binder. Calculators on cell phones, TI-89, TI-92, or TI-Inspire calculators, or any other electronic devices will not be allowed during testing without permission from the instructor.

Supplementary Course Information & Tutoring: Blackboard is the online course management system that will be utilized for this course. This course syllabus, as well as any class handouts can be accessed through Blackboard. Login at http://southplainscollege.blackboard.com. The user name and password should be the same as the MySPC and SPC email.

User name: first initial, last name, and last 4 digits of the Student ID
Password: Original CampusConnect Pin No. (found on SPC acceptance letter)

Free tutoring and video tapes are available in room M116 on the Levelland campus and Building 2 on the Reese campus. Digital versions of these tutorial videos can be viewed on your personal computer at the Blackboard address given above. Check Blackboard often for the latest tutoring schedule and course supplements (handouts, online practice quizzes, additional notes, sample problems for practice, etc.).

Questions regarding Blackboard support may be emailed to blackboard@southplainscollege.edu or by telephone to 806-716-2180.

Disability: Students with disabilities, including but not limited to physical, psychiatric, or learning disabilities, who wish to request accommodations in this class should notify the Disability Services Office early in the semester so that the appropriate arrangements may be made. In accordance with federal law, a student requesting accommodations must provide acceptable documentation of his/her disability. For more information, call or visit the Disability Services Office in the Student Health & Wellness Office, 806-716-2577.

Equal Opportunity: South Plains College strives to accommodate the individual needs of all students in order to enhance their opportunities for success in the context of a comprehensive community college setting. It is the policy of South Plains College to offer all educational and employment opportunities without regard to race, color, national origin, religion, gender, disability or age.

Diversity: In this class, the teacher will establish and support an environment that values and nurtures individual and group differences and encourages engagement and interaction. Understanding and respecting multiple experiences and perspectives will serve to challenge and stimulate all of us to learn about others, about the larger world and about ourselves. By promoting diversity and intellectual exchange, we will not only mirror society as it is, but also model society as it should and can be.

Calculus I Tentative Course Outline
MATH 2413.001 (MW 2:30pm – 4:35pm)
Spring 2017

Week	Day	Date	Lesson Topic & Assignment
1	Wednesday	January 18	Functions
2	Monday	January 23	Limits & Continuity
	Wednesday	January 25	Definition of Derivative
3	Monday	January 30	Power, Product, & Quotient Rules
	Wednesday	February 1	Trigonometric Functions & Their Derivatives
4	Monday	February 6	Chain Rule
	Wednesday	February 8	**Exam 1 (15%)**
5	Monday	February 13	Differentiation of some Transcendental Functions
	Wednesday	February 15	Implicit Differentiation
6	Monday	February 20	Rates of Change
	Wednesday	February 22	Related Rates
7	Monday	February 27	Curve Sketching: Maxima/Minima
	Wednesday	March 1	Curve Sketching: Inflection & Concavity
8	Monday	March 6	Optimization
	Wednesday	March 8	**Exam 2 (15%)**
		March 13-17	*Spring Break*
9	Monday	March 20	Integration with Indefinite Integrals
	Wednesday	March 22	Substitution Method
10	Monday	March 27	Definite Integrals & The Fundamental Theorem of Calculus
	Wednesday	March 29	Numerical Integration
11	Monday	April 3	**Exam 3 (15%)**
	Wednesday	April 5	Area
12	Monday	April 10	Volumes of Revolution: Disks
	Wednesday	April 12	Volumes of Revolution: Washers & Shells
13	*Monday*	*April 17*	*Easter Holiday*
	Wednesday	April 19	Moments & Centroids
	Wednesday	*April 19*	*Online Registration for Spring Interim, Summer, and Fall Opens at 8:00am*
14	Monday	April 24	Lengths of Plane Curves & Surface Area of Revolution
	Wednesday	April 26	**Exam 4 (15%)**
	Thursday	*April 27*	*Last day to drop spring semester courses*
15	Monday	May 1	Work & Fluid Pressures
	Wednesday	May 3	Review for comprehensive final exam
16	Wednesday	May 10	**Final Exam (20%) from 3:15-5:15pm**

Calculus I Tentative Course Outline
MATH 2413.200 (TR 3:30pm – 5:15pm)
Spring 2017

Week	Day	Date	Lesson Topic & Assignment
1	Tuesday	January 17	Functions
	Thursday	January 19	Limits & Continuity
2	Tuesday	January 24	Definition of Derivative
	Thursday	January 26	Power, Product, & Quotient Rules
3	Tuesday	January 31	Trigonometric Functions & Their Derivatives
	Thursday	February 2	Chain Rule
4	Tuesday	February 7	Differentiation of some Transcendental Functions
	Thursday	February 9	**Exam 1 (15%)**
5	Tuesday	February 14	Implicit Differentiation
	Thursday	February 16	Rates of Change
6	Tuesday	February 21	Related Rates
	Thursday	February 23	Curve Sketching: Maxima/Minima
7	Tuesday	February 28	Curve Sketching: Inflection & Concavity
	Thursday	March 2	Optimization Part 1
8	Tuesday	March 7	**Exam 2 (15%)**
	Thursday	March 9	Optimization Part 2
		March 13-17	*Spring Break*
9	Tuesday	March 21	Integration with Indefinite Integrals
	Thursday	March 23	Substitution Method
10	Tuesday	March 28	Definite Integrals & The Fundamental Theorem of Calculus
	Thursday	March 30	Numerical Integration
11	Tuesday	April 4	**Exam 3 (15%)**
	Thursday	April 6	Area
12	Tuesday	April 11	Volumes of Revolution: Disks
	Thursday	April 13	Volumes of Revolution: Washers & Shells
13	*Monday*	*April 17*	*Easter Holiday*
	Tuesday	April 18	Moments & Centroids
	Wednesday	*April 19*	*Online Registration for Spring Interim, Summer, and Fall Opens at 8:00am*
	Thursday	April 20	Lengths of Plane Curves
14	Tuesday	April 25	Surface Area of Revolution
	Thursday	April 27	**Exam 4 (15%)**
	Thursday	*April 27*	*Last day to drop spring semester courses*
15	Tuesday	May 2	Work & Fluid Pressures
	Thursday	May 4	Review for comprehensive final exam
16	Thursday	May 11	**Final Exam (20%) from 1:00-3:00pm**