

South Plains College
Mathematics Department
Calculus II – MATH 2414
Course Syllabus
Fall 2019

Instructor: Jay Driver
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Office Hours: MW 12:00-1:00pm
TR 10:00-11:00am, 3:05-4:05pm
F 9:00-11:00am
And by appointment!

Course Description: MATH 2414. CALCULUS II. (4:3:2) Prerequisites: MATH 1316 (Trigonometry) and MATH 2413 (Calculus I). Topics covered include differentiation of transcendental functions, methods of integration, parametric and polar equations, volumes, areas, arc lengths, surface areas, indeterminate forms, and infinite series.

Textbook: OpenStax College. (2016). Calculus, Volume 2. Houston, TX: OpenStax CNX. Retrieval from <https://www.openstax.org/details/calculus-volume-2> Print ISBN 1938168062, Digital ISBN 194717214X

The following statements are considered at South Plains College to be **Core Objectives**, which are embedded into the curriculum of this course.

Communication Skills: effective development, interpretation, and expression of ideas through written, oral, and visual communication.

- 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: creative thinking, innovation, inquiry, analysis, evaluation, and synthesis of information.

- 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: the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.

- Manipulate and analyze numerical data and arrive at an informed conclusion
- Manipulate and analyze observable facts and arrive at an informed conclusion

Course Objectives: Successful completion of this course should reflect mastery of the following objectives.

1. Determine derivatives and antiderivatives of transcendental functions;
2. Evaluate integrals using methods of integration (integration by parts, trigonometric substitution, partial fraction decomposition, and integration tables);
3. Apply methods of integration to solve problems involving area, volumes of revolution, length of curves, surface area, center of mass, work, and fluid pressure;
4. Evaluate improper integrals;
5. Determine convergence or divergence of sequences and series;
6. Analyze power series for their interval of convergence;
7. Find Taylor (and Maclaurin) series representations of functions and their interval of convergence;
8. Compute area and length of graphs involving polar coordinates.

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 three consecutive classes or if you exceed five 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%).

Format for submitting all homework assignments:

1. Write the problem.
2. Show all necessary work.
3. Clearly mark your answer.
4. Check your answers in the back of the textbook (and sometimes on Blackboard) to make certain you are practicing correctly.

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 <https://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 is available in room M116 at the Levelland campus or in Building 2 at the Reese Center. 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.

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.

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.

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 to the Disability Services Office. For more information, call or visit the Disability Services Office at Levelland (Student Health & Wellness Office) 806-716-2577, Reese Center (Building 8) & Lubbock Center 806-716-4675, or Plainview Center (Main Office) 806-716-4302 or 806-296-9611.

South Plains College does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. The following person has been designated to handle inquiries regarding the non-discrimination policies: Vice President for Student Affairs, South Plains College -1401 College Avenue, Box 5, Levelland, TX 79336, 806-894-9611.

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all South Plains College campuses. Report violations to the College Police Department at 806-716-2396 or 9-1-1.

Calculus II Tentative Course Outline
MATH 2414.001 (MW 8:30am – 10:35am)
Fall 2019

Week	Day	Date	Lesson
1	Mon	Aug 26	<i>Assignment 1: Integration Review from Calculus I</i>
	Wed	Aug 28	<i>Assignment 2: Centers of Mass and Work</i>
2	Mon	Sep 2	<i>Labor Day Holiday</i>
	Wed	Sep 4	<i>Assignment 3: Transcendental Review with Applications</i>
3	Mon	Sep 9	<i>Assignment 4: Calculus of the Hyperbolic Functions</i>
	Wed	Sep 11	<i>Assignment 5: Integration by Parts</i>
4	Mon	Sep 16	<i>Assignment 6: Trigonometric Integrals</i>
	Wed	Sep 18	Exam 1 (15%)
5	Mon	Sep 23	<i>Assignment 7: Trigonometric Substitution</i>
	Wed	Sep 25	<i>Assignment 8: Partial Fractions</i>
6	Mon	Sep 30	<i>Assignment 9: Numerical Integration and Other Strategies</i>
	Wed	Oct 2	<i>Assignment 10: L'Hopital's Rule and Improper Integrals</i>
7	Mon	Oct 7	<i>Assignment 11: Basics of Differential Equations</i>
	Wed	Oct 9	<i>Assignment 12: Separation of Variables</i>
	Fri	Oct 11	<i>SPC Fall Break (all offices closed)</i>
8	Mon	Oct 14	Exam 2 (15%)
	Wed	Oct 16	<i>Assignment 13: Introduction to Sequences and Infinite Series</i>
9	Mon	Oct 21	<i>Assignment 14: Integral and Comparison Tests</i>
	Wed	Oct 23	<i>Assignment 15: Alternating Series, Ratio and Roots Tests</i>
10	Mon	Oct 28	<i>Assignment 16: Power Series</i>
	Wed	Oct 30	<i>Assignment 17: Maclaurin and Taylor Series</i>
11	Mon	Nov 4	Exam 3 (15%)
	Wed	Nov 6	<i>Assignment 18: Parametric Equations</i>
12	Mon	Nov 11	<i>Assignment 19: Calculus of Parametric Curves</i>
	Wed	Nov 13	<i>Assignment 20: Polar Coordinates</i>
	Thur	Nov 14	<i>Last day to drop a class at SPC</i>
13	Mon	Nov 18	<i>Assignment 21: Area and Arc Length in Polar Coordinates</i>
	Wed	Nov 20	<i>Assignment 22: Conic Sections in Rectangular Coordinates</i>
14	Mon	Nov 25	Exam 4 (15%)
	Wed-Fri	Nov 27-29	<i>Thanksgiving holiday</i>
15	Mon	Dec 2	<i>Assignment 23: Conic Sections in Polar Coordinates</i>
	Wed	Dec 4	Review for the Comprehensive Final Exam
16	Mon	Dec 9	Final Exam (20%) from 8:00-10:00am