

South Plains College
Mathematics Department
Calculus II – MATH 2414
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 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 equations, volumes, areas, arc lengths, surface areas, indeterminate forms, infinite series, and hyperbolic functions. (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: 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 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 three major exams (20% 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)

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

Free tutoring and video tapes are available in room M116 on the Levelland campus and in Building 2 at the Reese Center. 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, videos, etc.).

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 II Tentative Course Outline
MATH 2414.001 (MW 8:30am – 10:35am)
Spring 2017

Week	Day	Date	Lesson
1	Wednesday	January 18	Inverse Functions
2	Monday	January 23	Natural Logarithms (Derivatives & Integration)
	Wednesday	January 25	Natural Logarithms (Logarithmic Differentiation & Applications)
3	Monday	January 30	The Exponential Function
	Wednesday	February 1	a^x and $\log_a x$
4	Monday	February 6	Growth & Decay
	Wednesday	February 8	Inverse Trigonometric Functions
5	Monday	February 13	Derivatives & Integrals Involving Inverse Trigonometric Functions
	Wednesday	February 15	Applications Involving Inverse Trigonometric Functions
6	Monday	February 20	Hyperbolic Functions
	Wednesday	February 22	Exam 1 (20%)
7	Monday	February 27	Basic Integration Formulas
	Wednesday	March 1	Integration by Parts
8	Monday	March 6	Powers of Trigonometric Functions
	Wednesday	March 8	Trigonometric Substitutions
		<i>March 13-17</i>	<i>Spring Break</i>
9	Monday	March 20	Partial Fractions
	Wednesday	March 22	L'Hopital's Rule & Improper Integrals
10	Monday	March 27	Exam 2 (20%)
	Wednesday	March 29	Sequences & Infinite Series
11	Monday	April 3	Integral & Comparison Tests
	Wednesday	April 5	Ratio & Root Tests; Alternating Series & Convergence
12	Monday	April 10	Power Series
	Wednesday	April 12	Taylor & Maclaurin Series
13	<i>Monday</i>	<i>April 17</i>	<i>Easter Holiday</i>
	Wednesday	April 19	Applications of Power Series
	<i>Wednesday</i>	<i>April 19</i>	<i>Online Registration for Spring Interim, Summer, and Fall Opens at 8:00am</i>
14	Monday	April 24	Exam 3 (20%)
	Wednesday	April 26	Polar Coordinates and Area (part 1 of 2)
	<i>Thursday</i>	<i>April 27</i>	<i>Last day to drop spring semester courses</i>
15	Monday	May 1	Polar Coordinates and Area (part 2 of 2)
	Wednesday	May 3	Polar Coordinates and Lengths of Curves
16	Monday	May 8	Final Exam (20%) from 8:00-10:00am

Calculus II Tentative Course Outline
MATH 2414.200 (TR 5:20pm – 6:55pm)
Spring 2017

Week	Day	Date	Lesson
1	Tuesday	January 17	Inverse Functions
	Thursday	January 19	Natural Logarithms (Derivatives & Integration)
2	Tuesday	January 24	Natural Logarithms (Logarithmic Differentiation & Applications)
	Thursday	January 26	The Exponential Function
3	Tuesday	January 31	a^x and $\log_a x$
	Thursday	February 2	Growth & Decay
4	Tuesday	February 7	Inverse Trigonometric Functions
	Thursday	February 9	Derivatives & Integrals Involving Inverse Trigonometric Functions
5	Tuesday	February 14	Applications Involving Inverse Trigonometric Functions
	Thursday	February 16	Hyperbolic Functions
6	Tuesday	February 21	Exam 1 (20%)
	Thursday	February 23	Basic Integration Formulas
7	Tuesday	February 28	Integration by Parts
	Thursday	March 2	Powers of Trigonometric Functions
8	Tuesday	March 7	Trigonometric Substitutions
	Thursday	March 9	Partial Fractions
		<i>March 13-17</i>	<i>Spring Break</i>
9	Tuesday	March 21	L'Hopital's Rule & Improper Integrals
	Thursday	March 23	Integral Tables and CAS
10	Tuesday	March 28	Exam 2 (20%)
	Thursday	March 30	Sequences & Infinite Series
11	Tuesday	April 4	Integral & Comparison Tests
	Thursday	April 6	Ratio & Root Tests; Alternating Series & Convergence
12	Tuesday	April 11	Power Series
	Thursday	April 13	Taylor & Maclaurin Series
13	<i>Monday</i>	<i>April 17</i>	<i>Easter Holiday</i>
	Tuesday	April 18	Applications of Power Series (part 1 of 2)
	<i>Wednesday</i>	<i>April 19</i>	<i>Online Registration for Spring Interim, Summer, and Fall Opens at 8:00am</i>
	Thursday	April 20	Applications of Power Series (part 2 of 2)
14	Tuesday	April 25	Exam 3 (20%)
	Thursday	April 27	Polar Coordinates and Area (part 1 of 2)
	<i>Thursday</i>	<i>April 27</i>	Polar Coordinates and Area (part 2 of 2)
15	Tuesday	May 2	Polar Coordinates and Lengths of Curves (part 1 of 2)
	Thursday	May 4	Polar Coordinates and Lengths of Curves (part 2 of 2)
16	Tuesday	May 9	Final Exam (20%) from 5:00-7:00pm.