

SYLLABUS AND COURSE INFORMATION
Calculus II, Math 2414, Fall 2025, Bin 326
Meets 8/25/2025 through 12/12/2025, Time: MTWT 12-12:50PM,
Fr. 12-12:50 PM recitation with a GA

Instructor: Dr. Nikolay Metodiev Sirakov
Office Hours: M W 3:30PM- 5PM
T Th 4PM- 5PM
Others by appointment
Friday research meetings

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COURSE TEACHING

The instructor will teach the fundamentals of inverse functions, basic techniques of integration, will discuss some basic applications of integrals to calculate lengths of arcs, and area of surfaces, will introduce some basics of differential equations (DE), will teach fundamentals of parametric equations and polar coordinates, and will end the course with the introduction of sequences and series.

COURSE DESCRIPTION

Text: Calculus, 9E Edition, by James Stewart, Daniel Clegg, Saleem Watson, Cengage pub.

The teacher's notes of the lectures will be posted D2L - Brightspace. Many of the examples in the notes are like those in the book but are not the same. Hence participating the lectures is useful and necessary.

Pre-requisite: MATH 2413-Calculus I with a Min Grade C

Helpful skills: Basic Calculus knowledge and linear algebra concepts, programming skills in Matlab.

Course Content: Chapter 6- sections 6.1-6.8; Chapter 7- sections 7.1-7.6, 7.8; Chapter 8- sections 8.1-8.4; Chapter 9- sections 9.1- 9.3, 9.5; Chapter 10- sections 10.1- 10.6; Chapter 11- sections 11.1- 11.6 .

Students Learning Outcomes (SLO):

Core Objectives: This course addresses the core objectives of critical thinking, communication, and empirical and quantitative skills.

Core Objective 1: Critical Thinking-Students will be able to analyze, evaluate, and solve problems when given a set of conditions and data for this;

Core Objective 2: Communication Skills In written, oral, and/or visual communication, East Texas A&M University students will communicate in a manner appropriate to the audience and occasion, with an evident message and organizational structure.

Core Objective 3: Theoretical and Quantitative Skills, Students will be able to interpret, test, and demonstrate principles revealed in equations and data.

Additional Students Learning Objectives:

SLO 1-The student will learn the basics of inverse functions and how to use and work with them;

SLO 2- The student will learn the fundamentals and how to calculate: integration by parts, trigonometric integrals, partial fractions and improper integrals;

SLO 3- The students will be able to apply integrals to calculate arc length, and area of a surface. Will become aware regarding the application of calculus to physics, biology, machine learning (ML);

SLO 4 – The students will study the use of differentials for DE developments for modeling;

SLO 5 - The students will learn about parametric equations and the polar coordinate systems;

SLO 6 - They will learn about infinite sequences and series and will be able to calculate the sum of such series.

Calendar: 1st week- Sections 6.1-6.3; 2nd week- Sections 6.4-.6.6; 3rd week– Sections 6.7, 6.8, 7.1; 4th 7.2-7.5; 5th week – Sections 7.6, 7.8; 6th week – 8.1, 8.2, possible Exam 1 and its review; 7th week - Sections 8.3- 8.5; 8th week- 9.1 and 9.2; 9th week- Section 10.1-10.2; 10th week– Sections 10.3-10.4; 11th week – Section 10.5 and 10.6; 12th week- Section 11.1-11.2; 13th week- possible Exam 2 and its review; 14th week – Section 11.3-11.5; 15th week – Section 11.6-11.7, preparation for the final exam.
Note: Due to the exams and the reviews given for the exams changes in the above schedule are possible.

COURSE EVALUATION- Basis for Evaluation: In-class exam(s)- 44% ; HW- 16%; Short quiz(zes)- 16%; Comprehensive final exam - 24%

Grading Policy: *A*:100%- 90% ; *B*:89% - 80% ; *C*:79% - 70%; *D*:69% - 60%; *F*: Less than 59 %

The professor reserves the rights to reward students for continuous hard work.

Additional Assignments: Extra Credit Problems

Final Test Section: Math2414 Date: Wednesday December 10, 2025 Time: 1:15PM-3:15PM

COURSE POLICIES

HW: *to be solved at home. No makeup is allowed.*

Short quizzes: *are to be solved independently during the class period. No makeup is allowed.*

Tests: *The two in-class tests will be given roughly at regular intervals. Students will be informed of the test dates around a week in advance. The test will take one class period and will be given at the scheduled times only. No opportunity will be given to take the test at earlier or later times except in cases of formal institutional excuses as mentioned above.*

Makeup: *Except in the case of a formal institutional excuse, no individual makeup test will be permitted.*

Cheating: HW, test, quizzes, extra credit problems results will be canceled in case of cheating.

AI use policy TAMUC acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that has the capacity to generate text, or suggest replacements for text beyond individual words, as determined by the instructor of the course. Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism). Individual instructors may disallow entirely the use of such software for individual assignments or for the entire course. Students should be aware of such requirements and follow their instructors' guidelines. If no instructions are provided the student should assume that the use of such software is disallowed. In any case, students are fully responsible for the content of any assignment they submit, regardless of whether they used an AI, in any way. This specifically includes cases in which the AI plagiarized another text or misrepresented sources.

13.99.99.R0.03 Undergrad Academic Dishonesty, 13.99.99.R0.10 Grad Student Academic Dishonesty
A&M-Commerce Supports Students' Mental Health. The Counseling Center at A&M-Commerce, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connection to community resources for students. Students have 24/7 access to the Counseling Center's crisis assessment services by calling 903-886-5145. For more information regarding Counseling Center events and confidential services, please visit www.tamuc.edu/counsel

Students with Disabilities: The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact: Office of Student Disability Resources and Services; Texas A&M University-Commerce; Halladay Student Services Building; Room 132 A/D; Phone (903) 886-5150 or (903) 886-5835; Fax (903) 468-8148 StudentDisabilityServices@tamuc-commerce.edu

All students enrolled at the U shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment (See Student's Guide Handbook, Policies and Procedures, Conduct).

Texas Senate Bill - 11 (*Government Code 411.2031, et al.*) authorizes the carrying of a concealed handgun in TAMUC buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations. For a list of locations, please refer to <http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf> and/or consult your event organizer). Pursuant to PC 46.035, the open carrying of handguns is prohibited on all TAMUC campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

Nondiscrimination Notice Texas A&M University-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. An environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

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The road that will lead you to find a good job is the road of learning, and developing yourself.

**Commerce, Texas
July 17, 2025**

Dr. Nikolay Metodiev Sirakov