South Texas College
Department of Mathematics

Calculus II MATH 2414

Chair's Information:

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Course Information:

Course Name: **Calculus II**

Course #: MATH 2414

Course Description:

This course covers derivatives and integrals of transcendental functions, integration methods and applications, infinite sequences and series..

Prerequisite: MATH 2413 with a grade of "C" or better.

Intellectual Competencies:

A. Critical and Analytical Thinking:

- Demonstrate creative thinking, decision making, problems solving, visualization, and reasoning skills.
- Understand the problem and choose the right method(s) to solve for the unknown(s).
- Applying mathematics to real-life problems, and checking the logic of the solution.
- Recognize problems and devise and implement plan of action.
- Organize and relate symbols, pictures, graphs, objects, and other information.

B. **READING:**
- Analyze and interpret handouts, the textbook, and/or visual aids used during the semester.

C. WRITING:
- Develop, organize, draft, revise, and edit a research paper on math-related topic. List of the possible topics is attached.

D. **SPEAKING:** Demonstrate effective oral communication techniques by engaging in discussions and presenting solutions answering questions from he students.

E. **LISTENING:** Analyze and interpret various forms of spoken communication.

F. **Technology:** Demonstrate knowledge of using the math computer software that accompanies the math textbook. Students will utilize scientific calculators and mathematics software to solve variety of problems.

Departmental Course Requirements:

- To provide quality academic education.
- Understand differentiation and integration of transcendental functions
- Understand L'Hopital's Rule
- Understand differentiation and integration of inverse trigonometric function and Hyperbolic Functions
- Understand different techniques of integration such as, integration by parts, Trigonometric Substitution, partial fraction, and integral tables.
- Understand limits of sequences and infinite series
- Understand different tests for convergence or divergence of infinite series
- Understand parameterized curves and polar coordinates
- Prepare students to succeed in other academic fields.
- Prepare students for upper level math-related fields.
- Develop a prepared workforce.

Evaluation:

Evaluation method for exemplary educational objectives:

Data will be collected from Term Project.

Grading Criteria

5 tests @ ..... 100 points each **(Lowest score will be dropped)** Term Paper .... 50 points Final Exam ..... 150 points (**Mandatory**) **Total Points... 600 points**	A = > 90% .....(540-600) B = 80%-89% .....(480-539) C = 70%-79% .....(420-479) D = 60%-69% .....(360-419) F = < 60% .....(<360)
All exams are in-class closed-book exams ***No Make-ups!***	

Required Textbook & Resources:

Calculus – 11th Edition by Weir/Hass/Giordano

Tutors at the Math Learning Centers will be available to help students with their homework. Math computer software with guided examples and real-life application accompany the textbook. Math Video tapes are available at all STC libraries. Students are asked to come to the board to present problems, discuss different techniques, and answer questions from instructor and other students. . The term project will address all the Exemplary Educational Objectives for the math core component. A list of the projects' topics is attached.

Term paper Guidelines:

The term paper should demonstrate the use of calculus II in the real-life applications. Consult with your instructor regarding the possible topics of the term paper.

Biographical Paper should contain at least three bibliographical references. Biographical Presentations should focus upon the mathematical contributions of the individual along with other human-interest information about the individual.

Topical Papers should contain a general mathematical description of the topic. Demonstrations about the topic are advisable. The presenter should understand the topic thoroughly enough to respond to questions posed by students or the instructor.

Developmental Studies Policy Statement:

- Failure to remain in at least one Developmental Studies course for students who have not met the passing standard on an approved assessment instrument in reading, writing, and/or mathematics may result in the student's withdrawal from ALL college courses.
- All developmental courses including the College Success course will be included in the Semester Grade Point Average (GPA) for all students at STC.

- Students in Developmental Studies will be limited to a maximum of 13 credit hours of course work per semester and 7 credit hours per summer session.
- Students taking 12 or more credit hours per semester who have not met the passing standard on an approved assessment instrument will be required to take two or more developmental courses every semester if they are deficient in more than one academic skill (reading, writing, and mathematics).

ADA Students with Disabilities Statement: Reasonable accommodations may be made that allow disabled students to be successful at STC. Accommodations may be provided for those students who submit the appropriate documentation by an outside/independent professional evaluator or agency. For more information, contact an STC ADA/DSS Counselor office. Students may volunteer to inform the Instructor about their disability and associated classroom limitations, if applicable.