COURSE INFORMATION FORM

Publish in college catalog? Yes ☒ No ☐

Course Title (*Maximum of 48 characters*) Calculus II

Department/Course Number MATH& 152 **Effective Quarter** Summer 2016

Administrative Unit Code: GM
Department: Mathematics

Credits 5 Variable No ☒ Yes ☐ _____ - _____

Multiple Versions No ☐ Yes ☒ _____ , _____ , _____ Maximum Class Size 36

Long Course Description (for college catalog): (***NOTE: Maximum of 995 characters)***

(Q,NS) Second course in calculus sequence. Integration of algebraic and transcendental functions and applications of definite integration, including areas, volumes, work, hydrostatic force and centers of mass; polar coordinate calculus and parametric equations. Numerical techniques and improper integrals. For majors in engineering, science, mathematics and others requiring more than one quarter of calculus.

Short Course Description (for class schedule): (***NOTE: Maximum of 240 characters)***

Second course in calculus sequence. For majors in engineering, science, mathematics and others requiring more than one quarter of calculus.

Prerequisites:
MATH& 151 or equivalent with a grade of C (2.0) or higher OR permission of a math instructor.

Co-requisites: None

Pass/Fail Option Available? Yes ☐ No ☒

Course Challenge Exam Available? Yes ☒ No ☐

Can course be repeated for credit? Yes ☐ No ☒

Number of repeats beyond initial enrollment: One ☐ Two ☐

Course Intent (*check all that apply)*:

☒ DTA Distribution/Skill
Quantitative Skills/
Area Natural Science

☐ DTA Elective *(check one only)*
- ☐ University Transfer List (A)
- ☐ Restricted Transfer (B/Gray area)

☐ Not allowable as an elective for DTA

☐ Fills requirement for _____ *(certificate/degree)*

☐ Other _____

Workload Information:

	Contact Hours		Percent of Load
Lecture	50	÷ 150 =	.333
Laboratory		÷ 200 =	
Science Lab		÷ 180 =	
Field Supervision		÷ 300 =	

Comments

Total .333

Student Learning Objectives - Upon completion of this course, successful students will be able to:

1. Compute definite integrals as limits of Riemann sums.
2. Evaluate definite integrals using the Fundamental Theorem of Calculus.
3. Evaluate integrals using substitution.
4. Use definite integrals to compute area between two curves, volumes of revolution and volumes with known cross sections.
5. Use definite integrals to compute mass, center of mass, moments of inertia, work and force due to fluid pressure.
6. Evaluate integrals involving transcendental functions, inverse trigonometric functions and hyperbolic functions.
7. Use various techniques of integration and tables to evaluate integrals.
8. Define and determine the convergence or divergence of improper integrals.
9. Solve and apply separable differential equations.
10. Sketch and analyze graphs of polar and parametrically defined curves.
11. Find slope, area and arc length in polar coordinates.

Core Learning Outcome	Introduced (I) or Assessed (A)?	If assessed, ho w is outcome measured?
CLO #2: Think critically	I ☐ A ☑	Critical thinking in the mathematical context is assessed via the program-specific outcome described below.

Program Specific Outcomes	Introduced (I) or Assessed (A)	If assessed, how is outcome measured?
Interpret and manipulate Mathematical language	I ☐ A ☑	Assessed by evaluating student work using a common rubric on common test items that require students to read a word problem, identify and execute an appropriate solution strategy, using Mathematical language. Each item also requires students to interpret the results in context.
Create, use and analyze graphs	I ☐ A ☑	Assessed by evaluating student work using a common rubric on common test items that require students to construct and interpret graphs using given information.
Make connections between Mathematical concepts and real world problems	I ☑ A ☐	