BERGEN COMMUNITY COLLEGE
DIVISION OF MATHEMATICS, SCIENCE AND TECHNOLOGY
DEPARTMENT OF MATHEMATICS

COURSE SYLLABUS

MAT-281 Calculus II

COURSE DESCRIPTION: Calculus II is a study of differentiation and integration of transcendental function; methods of integration; applications of the integral; indeterminate forms; improper integrals; infinite series; and applications.

CREDITS/HOURS: 4 credits, 4 hours

PREREQUISITE: MAT-280 Calculus I with a grade of C or better or by permission of the Department Chair

GENERAL EDUCATION COURSE: Yes

STUDENT LEARNING OBJECTIVES:

Upon successful completion of this course, students will be able to:

1. Evaluate derivatives and integrals of logarithmic, exponential and other transcendental functions.
2. Demonstrate ability to solve applications involving integrals.
3. Evaluate integrals using appropriate integration techniques and rules.
4. Analyze indeterminate forms.
5. Evaluate improper integrals.
6. Test for convergence of infinite series.
7. Analyze parametric equation.
8. Apply polar coordinates in the solution of problems.

ASSESSMENT MEASURES: Each of the above listed student learning objectives will be assessed by:

1. Written assignments and/or quizzes.
2. Written examinations.
3. Other, as announced by the instructor.

COURSE GRADE: Students should refer to the instructor's grading policy which will be distributed during the first meeting of the class.

TEXTBOOK: **Calculus, Early Transcendentals Functions, with CalcChat® and CalcView®**, 7th Edition, Larson/Edwards, Cengage Learning Publisher.

REFERENCES:

Calculus with Analytic Geometry, Anton, John. J. Wiley & Sons.
The Calculus with Analytic Geometry, Leithold, Harper-Row.
Calculus, Stewart, Brooks-Cole.
Calculus with Analytic Geometry, Thomas & Finney, Addison-Wesley Pub.
3000 Solved Problems in Calculus, Schaum's Solved Problem Series, McGraw-Hill

ELECTRONIC DEVICES: **The Department of Mathematics prohibits the use of cell-phones, PDA's, laptops, headphones, IPODs and other such devices in mathematics classes unless otherwise specified in the grading policy provided by the instructor at the beginning of the semester.**

FACULTY ABSENCE PROCEDURE: CLASS CANCELLATIONS may be found at http://www.bergen.edu/classcancellations A list is also posted in a glass case near A-129, the main corridor on the first floor and in Ender Hall. If a cancelled class is not listed, it should be reported to the Department Office (B-302) or the Adjunct Office (C-107).

WEBSITE: Go to http://www.bergen.edu/academics/academic-divisions-departments/mathematics for more information regarding the Mathematics Department.

STUDENT SUPPORT SERVICES:	Learning Assistance Center	Room: L-125	879-7489
	Math and Science Walk-In	Room: L-131	879-7489
	Office of Specialized Services	Room: L-115	612-5269

COURSE CONTENT:

TOPIC	CHAPTER	SECTIONS
Integration by Substitution	5	5 (Review)
Numerical Integration	8	6
Inverse Trigonometric Functions: Integration	5	8
Hyperbolic Functions	5	9 (Optional)
Differential Equations: Growth and Decay	6	2
Differential Equations: Separation of Variables	6	3
Differential Equations: The Logistic Equation	6	4 (Optional)
Area of a Region Between Two Curves	7	1 (Review)
Applications of Integration	7	2 – 5
	7	6 (Optional)
Integration Techniques	8	1 – 5, 7
Indeterminate Forms and L'Hopital's Rule	5	6
Improper Integrals	8	8
Infinite Series	9	1 – 6
Taylor Polynomials	9	7
Power Series and Taylor Series	9	8 – 10
Parametric Equations	10	2 – 3
Polar Coordinates and Polar Graphs	10	4
Area and Arc Length in Polar Coordinates	10	5