# Course Syllabus

**Course Title:** Calculus II  
**Date Submitted:** May 2020 (AAC: 20-27)  
**Department:** STEAM  
**Curriculum:** Mathematics

| Course Code: | (eg. ACC 101) MAT*256  
| Course Type: | L/D  

**Course Descriptors:**  
Make certain that the course descriptors are consistent with college and Board of Trustees policies, and the current course numbering system.

| Credit Hours: | 4  
| Developmental: | (yes/no) No  

**Elective Type:** G/LA/M

| Contact Hours:  
| Lecture: | 4  
| Clinical: | 0  
| Lab: | 0  
| Studio: | 0  
| Other: | 0  
| TOTAL: | 4  

**Class Maximum:** 30  
**Semesters Offered:** F/Sp

| Prerequisites:  
| C- or better in MAT*254 Calculus I  

| Corequisites: | none  

| Other Requirements: | none  

**Catalog Course Description:**  
A continuation of Calculus I. Topics include applications of integration, integration techniques, infinite series, parametric equations and polar coordinates.

**Topical Outline:**  
List course content in outline format.

1. Applications of Integration  
2. Integration Techniques and Improper Integrals  
3. Infinite Series  
4. Parametric Equations and Polar Coordinates  
5. Differential Equations (if time permits)

**Outcomes:**  
Describe measurable skills or knowledge that students should be able to demonstrate as:

**Course Outcomes:** Upon successful completion of this course, the student will be able to do the following:

1. Compute the area between two curves  
2. Compute Volume using the Shell and Disk method
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<tr>
<th>Evidence that they have mastered the course content.</th>
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<tr>
<td>3. Compute Arclength</td>
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<td>4. Solve Work problems</td>
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<td>5. Apply Basic Integration Rules</td>
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<td>6. Apply midpoint and Simpson’s Rule</td>
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<td>7. Apply various techniques of Integration: Substitution, Integration by parts, partial fractions</td>
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<td>8. Apply l’Hôpital’s Rule</td>
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<tr>
<td>9. Work with sequences and series, convergence, comparison, alternating series, Taylor series, Power series, Maclaurin series, ratio and root tests</td>
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<tr>
<td>10. Work with Parametric equations and Polar coordinates</td>
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<td>11. Compute Areas and lengths in Polar Coordinates</td>
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**PROGRAM:** does not apply

**GENERAL EDUCATION:** *(Numbering reflects General Education Outcomes as they appear in the college catalog)*

7. **Quantitative Reasoning** - uses numerical information, laws of logic, and mathematics to solve problems

**Evaluation:**

List how the above outcomes will be assessed.

Assessment will be based on the following criteria: quizzes, tests, exams and projects

**Instructional Resources:**

List library (e.g. books, journals, online resources), technological (e.g. Smartboard, software), and other resources (e.g. equipment, supplies, facilities) required and desired to teach this course.

None

**Textbook(s)**

Refer to current academic year printout