Course number, title and credits; total time allocation

<table>
<thead>
<tr>
<th>Course Letter/Number</th>
<th>Credits</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 154</td>
<td>5</td>
<td>Calculus II</td>
</tr>
</tbody>
</table>

Lecture/Discussion: 5 hrs/semester, Lab: hrs/semester, Clinical: hrs/semester

Catalog Description and Pre- and Co-requisites (Same as taxonomy and catalog)
Explore the following topics: methods and applications of the derivative and integral for inverse trigonometric and hyperbolic functions, indeterminate forms, series, and polar/parametric representation of functions. Graphing calculator required. The mathematics department recommends that the prerequisite not be more than two years old. If the prerequisite is more than two years old, then the recommendation is that the course placement exam be taken or the prerequisite be retaken to ensure the success of the student. Prerequisite: MAT 151*

Prerequisite: MAT 151, with 2.0 minimum, within 2 years

Knowledge, Skills and Abilities Students Acquire from this Course (Educational Objectives)
1. Apply calculus to standard applications. Applications may include volumes of solids of revolution, arc length, work, force, centroids, and differential equations.
2. Understand multiple techniques for integration including: substitution, tables, parts, partial fractions, and trigonometric substitution.
3. Understand sequences and series; identify manipulate, and test the convergence of various series including geometric, arithmetic, p-series, alternating, power, Taylor, and Maclaurin.
4. Perform calculus in polar coordinates and with parametric equations.
5. Apply appropriate technology in all of the above areas.

Associate Degree Outcomes Addressed in this Course (These must appear in course syllabus.)
- ADO 3: Demonstrate computational skills and mathematical reasoning
- ADO 7: Critical Thinking and Problem Solving

Units/topics of Instruction
See course description and educational objectives.

Instructional Techniques and Procedures
Although techniques vary from instructor to instructor, this course usually consists of mostly lecture and group work.

Instructional Use of Computer or Other Technology
A graphing calculator is used extensively in this course. The instructor may choose to incorporate the use of EnhancedWebAssign in homework, quiz and test assignments. Also, the instructor may choose to incorporate the use of MAPLE in graphing functions and solving various application problems.

Instructional Materials and Costs to Students
The instructional material for this course consists of the textbook and a graphing calculator.
Skills and abilities students should bring to the course

<table>
<thead>
<tr>
<th>Able to read</th>
<th>Able to compute</th>
</tr>
</thead>
<tbody>
<tr>
<td>an average amount of material</td>
<td>basic, pre-algebraic problems</td>
</tr>
<tr>
<td>an above average amount of material</td>
<td>simple algebraic problems</td>
</tr>
<tr>
<td>x technical or sophisticated material</td>
<td>x higher order mathematical problems</td>
</tr>
<tr>
<td>x relatively easy material</td>
<td>x short compositions</td>
</tr>
<tr>
<td>x moderately difficult material</td>
<td>x medium length compositions</td>
</tr>
<tr>
<td>x keyboard skills/familiar with computer</td>
<td>x lengthy compositions</td>
</tr>
<tr>
<td>x computer application</td>
<td>x web navigation</td>
</tr>
</tbody>
</table>

The course is usually scheduled

Day: 
- ☐ Fall
- ☑ Winter
- ☑ Spring

Evening: 
- ☐ Fall
- ☑ Winter
- ☐ Spring

Prepared by ____________________________ Date ____________________________

Approved by Dept. ____________________________ Date ____________________________

Approved by Dean ____________________________ Date ____________________________

Approved by Curr. Comm. ____________________________ Date ____________________________

(Last names, please) Form Revised 12/4/00