### Course Information Form

<table>
<thead>
<tr>
<th>Discipline</th>
<th>ETEC</th>
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<tbody>
<tr>
<td>Course Title</td>
<td>Parametric Modeling, Inventor</td>
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<th>CR. HR</th>
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<td>LECT HR</td>
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<td>LAB HR</td>
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<td>CLIN/INTERN HR</td>
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<td>CLOCK HR</td>
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### Catalog Description

An in-depth introduction to three-dimensional parametric modeling using Inventor. A current release of an industry parametric modeler will be used to produce three-dimensional part files, assemblies, presentations and orthographic production documents. Students will work on individual and group projects to solve simulated industry design problems.

### Prerequisites

ETEC 152 or concurrent enrollment

### Expected Student Outcomes in the Course (ESO)

Upon completion of this course, the student will be able to:

1. Identify and describe basic parametric modeling terminology.
2. Produce sketches of basic and complex geometry.
3. Constrain and describe with dimensions and constraints basic and complex geometry.
4. Create three-dimensional part files from sketch geometry.
5. Combine individual part files to produce related assemblies.
6. Produce orthographic construction drawings from part and assembly files.
7. Animate assemblies to show assembly order and operation.
8. Change existing parts and assemblies to reflect engineering modifications.
GENERAL EDUCATION OUTCOMES (ESO)
Specify which general education outcomes, if any, are substantially addressed by the course. Numbers in parentheses identify the Expected Student Outcomes linked to the specific General Education Outcome.

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>ESO</th>
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PROGRAM-LEVEL OUTCOMES

CAREER AND TECHNICAL EDUCATION PROGRAM OUTCOMES
Specify which Career and Technical program outcomes, if any, are substantially addressed by the course by completing the “Career and Technical Education template” to show the relationship between course and program outcomes to assessment measures.

CLASS-LEVEL ASSESSMENT MEASURES
Student accomplishment of expected student outcomes may be assessed using the following measures. (Identify which measures are used to assess which outcomes.)

Daily projects (1-8)
Performance exams (1-8)
Final project (1-8)
Final Exam (1-8)
Individual instructors may order this outline as fits the needs of their individual courses. In addition, they may place more emphasis on some areas than on others. What is assured is that this particular list is covered in the course. Other topics may be added to a course as the instructor sees fit, and as time and interest allow. An *asterisk can be used to mark an item as optional.

I. Introduction to Parametric Modeling
   A. Terminology
   B. Process
   C. Interface and variables
   D. Viewing Tools

II. Two-Dimensional Sketching

III. Constraints
   A. Geometric constraints
   B. Dimensional Constraints

IV. Part Files
   A. Extrusions
   B. Revolutions
   C. Successive Sketch Features
   D. Work Features
   E. Placed Features

V. Assemblies
   A. Top down
   B. Bottom up
   C. Assembly constraints
   D. Driving constraints

VI. Presentations
   A. Tweaks
   B. Changing view points
   C. Adding graphics and images

VII. Production Drawings
   A. Placing Views
   B. Dimensions
   C. Annotation and Symbols

*VIII. Three-Dimensional Prototyping and Scanning
   A. Preparing files for the prototyping process
   B. Printing and post-processing of prototypes
   C. Three-dimensional scanning