Course Number & Name: ENR 250 Computer-Aided Design Project

Credit Hours: 2.0  Contact Hours: 2.0  Lecture: 1.0  Lab: 1.0  Other: N/A

Prerequisites: Grade of “C” or better in ENR 205

Co-requisites: None  Concurrent Courses: None

Course Outline Revision Date: Fall 2010

Course Description: In this course, students apply the skills they learned from previous CAD courses to individually design a comprehensive project in their fields using specialized CAD software commonly used in workplaces. For example, manufacturing and mechanical students design parts using a parametric solid modeling package; architectural students make architectural designs using an animation and rendering package; and civil construction/surveying students complete projects in construction, road design, and surveying using civil and mapping packages. Students are provided internship opportunities with industry.

Course Goals: Upon successful completion of this course, students should be able to do the following:

1. design, propose, and plan the execution of a comprehensive computer-aided design (CAD) project;
2. utilize one or more of the specialty CAD systems (AutoCAD, Inventor, AutoCAD Architect, and/or Civil 3D) to complete the project;
3. employ standards consistent with industry standards to present the results; and
4. prepare a written report and make an oral presentation of the project.

Measurable Course Performance Objectives (MPOs): Upon successful completion of this course, students should specifically be able to do the following:

1. Design, propose, and plan the execution of a comprehensive computer-aided design (CAD) project;
   1.1 design a project within one’s discipline;
   1.2 propose a CAD software that will be used to implement the project; and
   1.3 create a time-line for the execution of the project

2. Utilize one or more of the specialty CAD systems (AutoCAD, Inventor, AutoCAD Architect, and/or Civil 3D) to complete the project:
   2.1 determine which of the CAD systems is useful for the proposed project; and
   2.2 proficiently use one or more of the CAD systems to complete the project
Measurable Course Performance Objectives (MPOs) (continued):

3. Employ standards consistent with industry standards to present the results:
   3.1 determine the detailing and presentation of the project; and
   3.2 verify consistency with the acceptable industry standards

4. Prepare a written report and make an oral presentation of the project:
   4.1 write a report detailing the planning, progress and completion of the project; and
   4.2 make an oral presentation summarizing the results and outcome of the project

Methods of Instruction: This is an independent study course. Instruction primarily consists of one-on-one instructor-student meetings to discuss progress made on the project and to receive help troubleshooting any obstacles hindering completion of the project.

Outcomes Assessment: Rubrics are used to evaluate the progress reports, the project, the written report and the oral presentation for the presence of the course objectives. Data is collected and analyzed to determine the level of student performance on these assessment instruments in regards to meeting course objectives. The results of this data analysis are used to guide necessary pedagogical and/or curricular revisions.

Course Requirements: All students are required to:

1. Meet on a regular basis with the instructor to give project progress reports.
2. Complete the project and the written report and give the oral presentation as scheduled.

Methods of Evaluation: Final course grades will be computed as follows:

<table>
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<tr>
<th>Grading Components</th>
<th>% of final course grade</th>
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<tr>
<td>Weekly instructor-student meetings</td>
<td>10 – 20%</td>
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<tr>
<td>One-on-one instructor-student meetings are necessary to discuss progress made on the project and to receive help troubleshooting any obstacles hindering completion of the project. Project completion (including the related report and oral presentation) involves meeting all course objectives.</td>
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<tr>
<td>Monthly project progress reports</td>
<td>20 – 25%</td>
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<td>Project progress reports will provide evidence of the achievement of course objectives and/or the hardships encountered while working on the project.</td>
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<td>Written report and oral presentation</td>
<td>50 – 60%</td>
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<td>Writing the report and giving the oral presentation is one of the course objectives and so this element will provide evidence of the extent to which students have achieved this objective.</td>
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NOTE: The instructor will provide specific weights, which lie in the above-given ranges, for each of the grading components at the beginning of the semester.
Academic Integrity: Dishonesty disrupts the search for truth that is inherent in the learning process and so devalues the purpose and the mission of the College. Academic dishonesty includes, but is not limited to, the following:

- plagiarism – the failure to acknowledge another writer’s words or ideas or to give proper credit to sources of information;
- cheating – knowingly obtaining or giving unauthorized information on any test/exam or any other academic assignment;
- interference – any interruption of the academic process that prevents others from the proper engagement in learning or teaching; and
- fraud – any act or instance of willful deceit or trickery.

Violations of academic integrity will be dealt with by imposing appropriate sanctions. Sanctions for acts of academic dishonesty could include the resubmission of an assignment, failure of the test/exam, failure in the course, probation, suspension from the College, and even expulsion from the College.

Student Code of Conduct: All students are expected to conduct themselves as responsible and considerate adults who respect the rights of others. Disruptive behavior will not be tolerated. All students are also expected to attend and be on time for all class meetings. No cell phones or similar electronic devices are permitted in class. Please refer to the Essex County College student handbook, *Lifeline*, for more specific information about the College’s Code of Conduct and attendance requirements.

Course Content Outline: **Note:** There is no text or weekly schedule for this course as it is an independent study type of course.