ENGR 105

**Computer Aided Drafting I**

**(5 credits)**

**Updated: 4/25/17**

Dear Student,

Welcome, this is going to be a great and fun quarter! Before you look over the syllabus for this class, I want you to think about your commitment to your college career. You have chosen to be in this class for a number of reasons that are important to you. You are going to spend a considerable amount of time learning about this subject both in and out of the classroom. You will be building new relationships that include the instructor and the other students. These relationships are important because they offer support to you and you offer support to them.

As a college student, you are expected to have homework that totals 1 to 2 hours for every hour that you are in class, which translates to 3 to 6 hours per week for this class. When you apply yourself to the expected amount of time, you will come to class with the assigned reading done, with your work completed as scheduled, and you will be prepared to contribute to class discussions and projects.

I expect that every student (gifted, general education or learning disabled) does his/her personal best. Your evaluation is based upon a comparison of your actual performance to your “potential”. Self-esteem, self-confidence, and knowledge come from overcoming challenges not by doing the minimum to get buy. Conversely, if students who struggle in an area are working to the best of their abilities, it does not seem fair to report a failing grade. It is necessary for me to try everything I know to assist you to succeed. Individualized instruction is based on this idea which places a great deal of responsibility on us; for me to “know” you and for you to be in charge of your education.

Ground rules include expectations that you:

* choose challenging work
* accept responsibility for actions
* follow through on commitments
* complete work doing your personal best
* work independently when appropriate
* seek help when befuddled, annoyed, lost, or confused
* concentrate on tasks
* follow directions without reminders
* are respectful and helpful to others
* are respectful to the environment
* participate appropriately in group lessons
* respect others’ personal space
* complete school and homework on time
* care about meeting your and my deadlines
* deal with what life throws at you (but not by yourself)

**Instructor:**

Gary L. Brandt, gbrandt@nwic.edu

Work: 392-4318

**Meeting Times: M-F 9:30 - 10:20**

**Office Hours**: Anytime that the “Open” sign is on

**Prerequisite:** CMPS 101 or permission of instructor

**Quarter Offered: Fall**

**Required for Information Technology Associate in Technical Arts (ATA) degree – Fabrication Technology concentration**

**Textbooks and Materials:**

Instructor Provided

**Course Description:**

Basic principles of computer-aided drafting and use of technique to create, and edit 3D CAD drawings.

This course is the first of three courses that are particularly useful for engineers and others involved with information technology. It is a hands-on course covering the fundamental operations of 3D CAD software that creates rapid prototype designs suitable for fabrication.

**NWIC Outcomes:**

|  |  |  |
| --- | --- | --- |
| **NWIC Outcomes** | **Instructional Activities**  | **Assessment/Evaluation Strategies** |
| Effectively communicate in diverse situations, from receiving to expressing information, both verbally and non-verballyMeet the technological challenges of a modern world | Write a technical report citing at least two references and written in the proscribed style such as APABe able to take an idea and translate it into an object | 1. Written submission and oral presentation

Integrate object creation path into portfolio |

**Course Outcomes:**

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| --- | --- | --- |
| **As a result of this course, students will be able to…** | **Instructional Activities**  | **Assessment / Evaluation Strategies** |
| Perform Rhino Basic operations | Textbook guided tutorialsProjects | Student Presentations/Portfolio |
| Create and modify simple models with Rhino | Textbook guided tutorialsProjects | Student Presentations/Portfolio |
| Translate models into formats suitable for 3D printing | Textbook guided tutorialsProjects | Student Presentations and fabricated models |
| Translate models into formats suitable for Laser engraving/cutting | Textbook guided tutorialsProjects | Student Presentations and fabricated models |

**Grades:**

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| --- |
| Attendance 10% |
| Project/Units – 50% |
| Lesson Exercises – 20% |
| Portfolio – 20% |

|  |  |  |  |
| --- | --- | --- | --- |
| A | 100-93 | C+ | 79-78 |
| A- | 92-90 | C | 77-73 |
| B+ | 89-88 | C- | 72-70 |
| B | 87-83 | D+ | 69-68 |
| B- | 82-80 | D | 67-63 |
|  |  | D- | 62-60 |

**Exams:**

Chapter quizzes may be given throughout the quarter. A midterm and final exam may be given.

**Assignments**

Assignments are due on the dates indicated in the schedule. You will be responsible for the following:

1. Reading Assignments from the textbook and the Internet.
2. Exercises, Case Studies and Labs from the text (class time will be available for these exercises).
3. Developing a **portfolio** of your work that you have createdduring the class and homework projects. The portfolio is a collection of your projects, diagrams, artwork, and notes. This will be turned in during mid-quarter, assessed, returned and then turned in again during the last week of class for final grading. Please check the [portfolio requirements](105portfolio.htm) weekly because new items will be added as the quarter progresses.
4. Writing a **technology report**. This report is based upon at least two news, magazine, or Internet sources. Reports are to be based on the content of the class or on a subject that pertains to information technology. The objective of the technology report is to provide practice for researching data from available informational sources and using that data to present a coherent and meaningful report. Please see the [report guidelines](../generic/reports/report_guidelines.htm) for requirements.

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| **Week** | **Topic** | **Assignment** |
| Week 1 | **Rhino Basics** |   |
| Creating Two-Dimensional Objects |   |
| Week 2 – 3 | **Tool & Machine Safety Discussion** |  |
| House Project | House & Traditional dwelling Handout |
| Week 4-5 | Precision Modeling |   |
| Rocket Project | Rocket Handout |
| Editing Objects |   |
| Week 6 | Race car project | Race Car Handout |
| Point Editing |   |
| Week 7 | Creating Deformable Shapes |   |
| Week 8 | Modeling with Solids |   |
| Creating Surfaces |   |
| Week 9 | Chess set project | Chess Set Handout |
| Week 10 | Importing and Exporting Models |   |
| Week 11 | Rendering |   |
| Week 12 | Dimensions |   |
| Portfolio Due/Final |   |