Course Information

FOUNDATIONS OF ENGINEERING GRAPHICS & DESIGN
GET 1150

Term: Fall 2017
Credit Hour: 3 Semester Credits
Course Format: 15-week, On Campus
Location: Boston
Meeting Days/Times:
Monday 5:50-8:35

Instructor Information

Name: Prof Cue
Email Address:
j.cue@neu.edu
Office Hours:
Virtual: email is the quickest way to reach me.

Course Description

This course provides students with basic engineering drafting and introductory design skills needed to function in a Computer-aided Drafting (CAD) environment. It covers the history of engineering hand drafting and the difference/similarities with respect to CAD tools used today. The basic steps of the engineering design process are discussed and students learn to apply these steps in small design projects where pictorial sketching and descriptive geometry (isometric and oblique drawings and projections) are used to communicate graphical solutions to proposed problems. It covers basic understanding of mechanical, electrical, and architectural layouts, and introduces basic dimensioning and tolerancing terms. Through introductory lab sessions, students are introduced to the general features, capabilities, similarities and differences among common engineering CAD software such as SolidWorks, Autodesk AutoCAD, and PTC Creo. Through introductory lab sessions.

Course Materials

- TEXT BOOK:
  ISBN 978-1-118-07888-4
- Software: Autodesk AutoCAD, PTC Creo, SolidWorks or equivalent.

Expectations
• Workload: This is a 15-week-three-semester-credit course. Students should expect 2.5 weekly hours of classroom faculty instruction, and a minimum of 5 hours of out-of-class student work per week.

• Attendance is mandatory. If a student misses a class session, he/she is responsible for the material covered. Unjustified absences are penalized by up 5 points reduction per absence, on the final grade.

• General Policy on late/incomplete work: Late assignments carry point’s reduction up to half the corresponding credit for the specific assignment. Deadlines must be met even if the student is absent from class. Assignments are due during the first half-hour of class on the due date.

• Communication with the instructor: Communication via e-mail is encouraged. Students are also encouraged to bring questions to the class sessions.
Program Objectives

The objective of the Engineering Technology Programs at Northeastern University is to prepare students such that within a few years of graduation they will be able to secure for themselves a successful engineering career and contribute decisively to the improvement and development of technology by demonstrating their ability to:

1. Address and solve complex and broadly-defined engineering problems related to their discipline and field of specialization.
2. Work as team members, show leadership, and communicate technical concepts and ideas effectively.
3. Manifest a high level of professional integrity, and make ethical decisions that will have a positive impact on the organization and society.
4. Embrace and practice lifelong learning, continue personal growth, and professional self-improvement.

Student Learning Outcomes

_Based on satisfactory completion of this course, a student should be able to ..._

1. Recognize and apply the systematic phases and steps of the engineering design process that is widely used to identify solutions to technical problems.
2. Apply both analysis and synthesis during engineering design elements, systems or products aiming at satisfying a technical need.
3. Communicate technical ideas graphically following standard techniques utilized in engineering CAD environments.
4. Recognize ethical and professional responsibilities in engineering design the impact of engineering solutions in global, economic, environmental, and societal contexts.
5. Recognize the ongoing need for self-study and practice in order to update and improve engineering knowledge and apply this knowledge appropriately.
6. Demonstrate commitment to quality and timeliness to submit required assignments.

Course Methodology

This course emphasizes communication of ideas, designs and initiatives following engineering standards, methods and techniques of graphical communication. Instructor and students interact directly in class. During the lectures, the Instructor presents and explains the underlying methods and rules to communicate graphically (see course schedule) and illustrates problem-solving approaches and techniques via freehand.
sketching, hands-on demonstrations, and computer drafting methods with direct and active participation of students. Therefore, student attendance is expected.

The instructor reserves the right to make changes to the course schedule of topics as needed under unexpected circumstances. The changes will be clearly announced in class.

**Grading/Evaluation Standards**

Student’s progress, productivity and learning in engineering technology will be assessed and evaluated based on demonstrated performance, completion and quality of course academic assignments and activities that may include: conventional exams, tests, quizzes, homework assignments, participation in class lectures, attendance and participation in laboratory or shop hands-on activity sessions, team-member or individual project development, technical written and oral reports, and other assignments as specified by the instructor. Assignments expected in this course and their corresponding weight are established in the Grade Breakdown below.

Final numeric grade is computed based on student’s performance in each assignments component of the course and the accumulated points. The final **letter grade** of the course - on the basis of 100 as perfect score - is assigned in reference to the following ranges:

- A [94 -100], A- [90 – 94), B+ [87 – 90), B [84 – 87), B- [80 – 84), C+ [77 – 80), C [74 – 77), C- [70 – 74), D+ [67 – 70), D [60 – 67), F less than 60.

**Grade Breakdown:**

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Weight</th>
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</thead>
<tbody>
<tr>
<td>Homework Weekly Assignments</td>
<td>30 %</td>
</tr>
<tr>
<td>Quizzes (2)</td>
<td>10 %</td>
</tr>
<tr>
<td>In-class Midterm Exam (1)</td>
<td>30 %</td>
</tr>
<tr>
<td>In-class Final Exam (1)</td>
<td>30 %</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>100%</td>
</tr>
</tbody>
</table>
# Course Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic(s)</th>
<th>Chapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9/11 Live</td>
<td>Introduction to Engineering Design</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>9/18</td>
<td>Freehand Sketching</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>9/25 Live</td>
<td>American National Standards Institute (ANSI) and American Society of Mechanical Engineers (ASME) Drawing Requirements</td>
<td>N/A</td>
</tr>
<tr>
<td>4</td>
<td>10/2 Live</td>
<td>Planar Projections and Pictorial Views</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>10/9</td>
<td>Multiviews</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>10/16</td>
<td>Multiviews</td>
<td>4</td>
</tr>
<tr>
<td>7</td>
<td>10/23 Live</td>
<td>Auxiliary and Section Views</td>
<td>5</td>
</tr>
<tr>
<td>8</td>
<td>10/30</td>
<td>Auxiliary and Section Views</td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td>11/6 Live</td>
<td>Dimensioning</td>
<td>6</td>
</tr>
<tr>
<td>10</td>
<td>11/13</td>
<td>CAD Software</td>
<td>7</td>
</tr>
<tr>
<td>11</td>
<td>11/20</td>
<td>Working Drawings</td>
<td>8</td>
</tr>
<tr>
<td>12</td>
<td>11/27</td>
<td>Reverse Engineering Tools</td>
<td>9</td>
</tr>
<tr>
<td>13</td>
<td>12/4 Live</td>
<td>Final Project Assigned</td>
<td>8</td>
</tr>
<tr>
<td>14</td>
<td>12/11</td>
<td>Final Project Due</td>
<td></td>
</tr>
</tbody>
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**End-of-Course Evaluation Surveys**

Your feedback regarding your educational experience in this class is very important to the College of Professional Studies. Your comments will make a difference in the future planning and presentation of our curriculum.

At the end of this course, please take the time to complete the evaluation survey at [https://neu.evaluationkit.com](https://neu.evaluationkit.com). Your survey responses are **completely anonymous and confidential**. For courses 6 weeks in length or shorter, surveys will be open one week prior to the end of the courses; for courses greater than 6 weeks in length, surveys will be open for two weeks. An email will be sent to your HuskyMail account notifying you when surveys are available.

**Academic Integrity**

A commitment to the principles of academic integrity is essential to the mission of Northeastern University. The promotion of independent and original scholarship ensures that students derive the most from their educational experience and their pursuit of knowledge. Academic dishonesty violates the most fundamental values of an intellectual community and undermines the achievements of the entire University.

As members of the academic community, students must become familiar with their rights and responsibilities. In each course, they are responsible for knowing the requirements and restrictions regarding research and writing, examinations of whatever kind, collaborative work, the use of study aids, the appropriateness of assistance, and other issues. Students are responsible for learning the conventions of documentation and acknowledgment of sources in their fields. Northeastern University expects students to complete all examinations,
tests, papers, creative projects, and assignments of any kind according to the highest ethical standards, as set forth either explicitly or implicitly in this Code or by the direction of instructors.

Go to http://www.northeastern.edu/osccr/academic-integrity-policy/ to access the full academic integrity policy.

**Student Accommodations**

The College of Professional Studies is committed to providing equitable access to learning opportunities to students with documented disabilities (e.g. mental health, attentional, learning, chronic health, sensory, or physical). To ensure access to this class, and program, please contact The Disability Resource Center (http://www.northeastern.edu/drc/) to engage in a confidential conversation about the process for requesting reasonable accommodations in the classroom and clinical or lab settings. Accommodations are not provided retroactively so students are encouraged to register with the Disability Resource Center (DRC) as soon as they begin their program. The College of Professional Studies encourages students to access all resources available through the DRC for consistent support.

**Library Services**

The Northeastern University Library is at the hub of campus intellectual life. Resources include over 900,000 print volumes, 206,500 e-books, and 70,225 electronic journals.

For more information, visit http://library.northeastern.edu/.
Tutoring Services
Tutoring can benefit skilled professionals and beginning students alike. NU offers many opportunities for you to enhance your academic work and professional skills through free one-on-one academic support on and off campus. Tutoring is available in multiple subject areas.

For more information, visit http://www.cps.neu.edu/student-resources/tutoring-services.php.

Northeastern University Online Technical Help
Get immediate 24/7 technical support for NU Online by calling 855-836-3520 or visiting the online Support Center. Support via e-mail is also available within one business day at NUOnline@neu.edu.

Undergraduate Catalog
The College of Professional Studies Undergraduate Catalog is a reference/resource with information about curricula, resources, and academic and student policies. For more information, visit http://www.cps.neu.edu/student-resources/.

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