CGD 6 - Advanced Computer Graphics (GD&T)  Spring 2013

Units: 4    Hours: 2 Lecture & 6 Lab     Room No. LI126    Tues/Thurs 12:50-2:10 P.M.

COURSE SYLLABUS

Instructor: Dr. Colette Marie McLaughlin
email: cmclaughlin@gavilan.edu
Office Hours: by appointment
class webpage: http://hhh.gavilan.edu/cmclaughlin/cgd6/

Course Description: Technical skills required for computer aided drafting/design (CAD) for precision manufacturing (CAM) and/or engineering (CAE) using ANSI/ASME Y14.5 2009 geometric dimensioning and tolerancing (GD&T). Develops design and integrated technology skills that are required to design, engineer; draft, inspect, manufacture and/or market precision equipment and/or products. Hybrid class: required assignments/lab may be completed both in lab and off-site.

Advisory: Eligible for English 250/260 and Mathematics 233 and passing grades in CGD 2 or equivalent.

Overview of activities to support learning: CGD 6 provides a technical systems engineering perspective and applies individual, group and team activities to develop skills and knowledge to prepare for and succeed in preferred technical/engineering design field. Lectures, demonstrations, readings, research, field experiences and students unique prior knowledge enhance fundamental competencies in computer graphics and design. SolidWorks or other parametric and/or industry standard software is used as a tool to assess and develop 3D models by applying GD&T symbology and methods required to manufacture fully functioning products that meet user's unique needs in a cost effective and environmentally sound manner. Electronic portfolios are produced that graphic communicate skills, related to drafting, are required to design, engineer, manufacture, manage and market environmentally-sound, ecologically-feasible and socially-responsible products that meet users' needs from cradle to grave.

Expected learning outcomes: Students will be able to:

- Create working drawings of product using industry standards for selected design field
- Prepare self-explanatory presentation of product using animated 3D rendered models to understand product
- Freehand sketch 3D/pictorial drawings of object, perspectives, isometrics and axonometrics
- Provide necessary orthographic views to adequately dimension with tolerances product for fabrication.

Required Text:


Recommended Texts—From previous CGD courses:


Syllabus: The most current syllabus is available at http://hhh.gavilan.edu/cmclaughlin/cgd6

Additional Readings: Other readings may be assigned in class or provided on the class website or on iLearn throughout the semester when needed to support lectures and assignments.

Supplies: An HB pencil, eraser and paper are minimal requirements for sketching exercises. At least one 1 GB USB flash drive for file transfer and storage. Headphones are required for audio use.
Computer Graphics Lab & Arranged Hours: Gavilan’s CGD 6 requires students to complete 6.33 arranged hours per week in addition to lecture to work on projects in and outside class. Computer Graphics provides an interdisciplinary supervised lab that supports this requirement. CGD lab provides technology to complete projects, practice computer graphic skills and obtain individualized computer assisted instruction to learn a wide range of other computer graphic programs. Lab hour involvement meets 50% or more of participation grade.

Evaluation/Grading: Your final grade is calculated using seven performance measures.

- **Participation**: credit for collaboration & contributions to your own and your peers’ success in class and lab.
- **Homework**: sketch assignments that demonstrate your ability to apply concepts discussed in class.
- **Assignments**: additional assignments to apply and practice
- **Research Projects**: assess your ability to find, apply and document relevant sources of information
- **Design Projects**: evaluates the development of your products during all design phases.
- **Portfolio**: grades the presentation of your projects in an electronic portfolio.
- **Midterm and Final Exams**: tasks that evaluate knowledge of skills and concepts.

**Grades:** Mastery of CGD learning outcomes is evaluated using multiple measures. You may improve grades on assignments by making necessary revisions and resubmitting work by final exam. With instructor’s approval, you may enter into a contract to substitute equivalent individualized work for required projects and exercises. If you earn excellent participation your final grade will be rounded up should your final percentage fall within one percent of next grade. Study guides for review and practice will be provided prior to each exam. Evaluation information is further described below.

![Grade Distribution Chart](chart.png)

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<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Participation</td>
<td>15%</td>
</tr>
<tr>
<td>Homework</td>
<td>10%</td>
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<tr>
<td>Assignments</td>
<td>10%</td>
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<tr>
<td>Design Projects</td>
<td>25%</td>
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<tr>
<td>Portfolio</td>
<td>10%</td>
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<tr>
<td>Midterm</td>
<td>10%</td>
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<tr>
<td>Final Exam</td>
<td>20%</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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**Deadlines:** Unless otherwise noted, work & assignments listed on iLearn and/or class website must be submitted to the instructor electronically on date due in appropriate electronic form by 5 p.m. Other than extraordinary circumstances, a late assignment will be reduced one whole letter grade each week it is overdue.

**Attendance Policy:** Missing 5 hours of class, without prior arrangements, may result in you being dropped without credit. Additionally, being on time and in class is directly related to your participation grade.

**Honesty Policy:** Students are expected to exercise academic honesty and integrity. Any form of cheating and plagiarism will result in disciplinary action and may include recommendation for dismissal.

**Other Policies:**

**Students with special needs:** If you require special services or arrangements due to hearing, visual, or other disability contact your instructor, counselor, or the Disability Resource Center.

**Occupational/Vocational Students:** Limited English language skills will not be a barrier to admittance to and participation in Vocational Educational Programs.