Course Description: Introductory hybrid course that develops graphic communications, drafting technology and other interdisciplinary skills to prepare for transfer/careers in design, engineering, planning, marketing, manufacturing and project management. Learning outcomes include creating freehand sketches, SolidWorks 2D drawings and 3D models and other graphics to apply theory and knowledge of elements and principles of visual design, typography, creative problem solving, human factors, sustainability, professional ethics and research skills. This Career Technology Education (CTE) course prepares students for diverse careers represented by:

<table>
<thead>
<tr>
<th>Environmental Design</th>
<th>Product Design</th>
<th>Engineering</th>
<th>Other Related Careers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architectural Designer</td>
<td>Industrial Designer</td>
<td>Civil Engineer</td>
<td>Manufacturing</td>
</tr>
<tr>
<td>Environmental Planner</td>
<td>Product Designer</td>
<td>Mechanical Eng.</td>
<td>Marketing</td>
</tr>
<tr>
<td>Landscape or Interior Designer</td>
<td>Graphic Designer</td>
<td>Systems Engineer</td>
<td>Project Management</td>
</tr>
</tbody>
</table>

Advisory: Satisfactory score on the English and Math Placement exams, or a grade of "C" or better in English 250, completion of Math 233 or two years of high school Algebra with grades "C" or higher.

Overview of activities to support learning: Collaborative project based activities develop knowledge and skills to determine, prepare for and succeed in preferred engineering/design field. Lectures, demonstrations, readings, research and practical experiences develop new and expand prior knowledge. Students practice freehand sketching, problem solving and other design skills using industry standards, orthographic drawings and 3D modeling. Students use SolidWorks and other software to generate concept, engineering, and promotion graphics/videos to explain, fabricate and market simple products using computer graphics and design skills.

Expected learning outcomes: Students will be able to:
- Research and explain characteristics of electronic portfolios necessary to meet career objective.
- Document a systematic problem solving process using design sketches, notes and graphics, including referenced sources to propose, describe and promote aesthetically pleasing, sustainable, useful products.
- Apply industry standards within orthographic drawings and 3D models to explain & market product.
- Produce electronic portfolio that communicates ability to design products that meet customer requirements.

Required Texts:

Recommended Texts:
- Planchard, David and Marie Planchard. *Official Certified SolidWorks Associate CSWA Exam Book*. Schroff


Hybrid Course: Schedule and resources of activities that support learning are posted on iLearn. Deadlines and requirements for assignments are available on iLearn and may be accessed.

Supplies: HB pencils, erasers and paper are minimal requirements for sketching exercises. You need at least one 1GB USB flash drive for file transfer and storage. Headphones are required for audio use.
**Computer Graphics Lab & Arranged Hours:** Gavilan’s CGD 2 requires students to complete 3 arranged hours per week in addition to lecture to complete projects in and outside class. Computer Graphics Lab (CGD 110) is an interdisciplinary supervised lab that supports this requirement. CGD 110 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. CGD 110 may be taken for 1 to 4 units.

**Contract Option:** a written proposal submitted by 27 Sept and approved by instructor allows a contract to substitute equivalent individualized projects for course assignments, which fulfill SLOs.

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

- **Participation:** credit for collaboration and contributions to both 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
- **Design Projects:** evaluates your ability to develop complete product while documenting design process.
- **Portfolio:** assesses the presentation of your projects in an electronic portfolio.
- **Exams:** are design problems testing ability to demonstrate knowledge of skills and concepts.

**Grades:** Mastery of CGD student learning outcomes (SLOs) is evaluated using above multiple measures. You may improve grades on assignments by making necessary revisions and resubmitting work by final exam. Earning excellent participation provides an additional benefit of allowing final grade to round 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](image)

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation</td>
<td>15%</td>
</tr>
<tr>
<td>Homework</td>
<td>10%</td>
</tr>
<tr>
<td>Assignments</td>
<td>10%</td>
</tr>
<tr>
<td>Design Projects</td>
<td>25%</td>
</tr>
<tr>
<td>Portfolio</td>
<td>10%</td>
</tr>
<tr>
<td>Midterm</td>
<td>10%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20%</td>
</tr>
</tbody>
</table>

**Deadlines:** Unless otherwise noted all projects are to be submitted in appropriate format by 5 p.m. of due date (see iLearn for due dates). Other than extraordinary circumstances, late assignments are increasingly reduced each week they are overdue.

**Attendance Policy:** Missing 5 hours of class, without prior arrangements, may result in you being dropped without credit. Additionally, participation includes being on time and in class.

**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.