Mechanical Engineering 100-01 - Graphics 1 (Lecture)
Course Syllabus – Spring 2019

Instructor: Matthew Mione
O’Connell 423
530-898-4960
mmione@csuchico.edu
Office Hours: M 3-4, W 4-5, and by appointment

Classes
M 4:00—4:50 PM, GLEN 212

Co-requisites: MECH 100L Laboratory (Note: a separate course)

MECH 100L Information (OCNL 438)
M. Mione, MECH 100L-01, -03
MECH 100L-01 M 5:30-8:20 PM
MECH 100L-03 W 5:30-8:20 PM

Course Description
Graphics I is the first course in Engineering Graphics which includes the fancy stuff, computer aided drafting or computer aided design (CAD), but also the old school method of hand sketching.

Sketching techniques is covered in lecture and exercised in the homework. The CAD software is SolidWorks, the minutiae of which is covered in MECH 100L. The generic issues of CAD are covered in MECH 100 and include visualization, design intent, construction and assembly methods, and design communication, the most important topic.

A necessary skill is visualization, the mental task of converting 2-D representation to 3-D and vice-versa. The PSVTR (Purdue Spatial Visualization Test—Rotation), a useful tool to enhance this skill, is frequently used in a modified form.

Course Content Learning Outcomes
Upon successful completion of this course, students will be able to:

A. Demonstrate enhanced sketching and visualization skills.
B. Understand the principles of mechanical component design.
C. Understand the meaning of design intent.
D. Understand the principles solids modeling.
E. Understand the drawing standards.
F. Understand the proper use of dimensioning, tolerancing
G. Understand the basic principles of GD&T.
H. Understand the principles and connection of design to sustainable engineering and manufacturing
Course Usage of Blackboard Learn
Copies of the course syllabus and major assignments may be found on Blackboard Learn. You are responsible for regularly checking the online resources, which is accessed through the Chico State Portal at http://portal.csuchico.edu. Support materials for the course will be provided via the portal and it is expected that you will either have hardcopies or electronic access to the materials during in-class activities.

Course Description and Goals
Introduction to engineering graphics, including the following; orthographic projection, auxiliary views, isometric views, dimensioning, tolerancing, drawing standards, working standards, and solids modeling.

Student Learning Objectives
Students will gain understanding of mechanical design and mechanical drawing standards and processes for the mechanical, mechatronic, and manufacturing industries.

Required Texts/Readings


Classroom Protocol
It is expected that students are in-class, prior to each class, as the class will start promptly at the scheduled time. Any homework class assignments are due at the start of the class and must be submitted in person at the turn in file that will be located at the front of the classroom.

The use of technology is encouraged for in-class coursework and activities, however extra-curricular activities (phone calls, texting, email, web surfing, etc.,) are not allowed during class. Students violating this policy will be asked to leave as they are potentially distracting to their colleagues who are engaged in learning.

Communication
If you need to meet or contact me outside of class hours please attend office hours or email. Please use my contact information listed on the first page to communicate, and do not go through the Blackboard channels. For laboratory based concerns, it is also suggested that you seek out your laboratory instructor for assistance.

In the event that I need to contact the class members for matters between class meetings (schedule, assignment, or class changes, etc.), it will be done via your university email account linked to the Portal. University policy requires students to monitor campus email accounts and it is suggested that you set up email forwarding if you have another preferred email account.

Dropping and Adding
You are responsible for understanding the policies and procedures about add/drops, academic renewal, etc. found http://www.csuchico.edu/catalog/. You should be aware of the deadlines and penalties for adding and dropping classes.
Assignments and Grading Policy
Assignments are due according to the class schedule and are subject to change depending on course progress through the semester. Changes to the schedule will be announced during class or via the communication protocol described above.

Homework assignments are due at the start of the class and must be submitted in person. If class has started, work is considered late. Late work will only be accepted via my mailbox in the department office (OCNL 419) by 5 PM the following day. Late work can only earn a maximum of 60% credit.

Assigned readings are to be completed before class. Class discussion period will be used to review topics covered within the reading, clarify student questions, and expand on the topics through real-world applied examples. To ensure that students are conducting their assigned readings, there will be chapter quizzes posted on BBL that will test their knowledge of the presented material.

Course Grade Breakdown:

<table>
<thead>
<tr>
<th>Grade</th>
<th>A</th>
<th>A-</th>
<th>B+</th>
<th>B</th>
<th>B-</th>
<th>C+</th>
<th>C</th>
<th>C-</th>
<th>D+</th>
<th>D</th>
<th>F</th>
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<tbody>
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<td>93.33</td>
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University Policies and Campus Resources

Academic integrity
Students are expected to be familiar with the University’s Academic Integrity Policy. Your own commitment to learning, as evidenced by your enrollment at California State University, Chico, and the University’s Academic Integrity Policy requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the Office of Student Judicial Affairs. The policy on academic integrity and other resources related to student conduct can be found at: http://www.csuchico.edu/sjd/integrity.shtml.

Campus Policy in Compliance with the American Disabilities Act
If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Students with disabilities requesting accommodations must register with the DSS Office (Disability Support Services) to establish a record of their disability.

Special accommodations for exams require ample notice to the testing office and must be submitted to the instructor well in advance of the exam date.
IT Support Services (http://www.csuchico.edu/itss)
The CAD lab with SolidWorks installed is located in OCNL 438. Other (non-CAD) computer labs for student use are located on the first and fourth floor of the Meriam Library, Room 116 and 450, Tehama Hall Room 131, and the Bell Memorial Union (BMU) basement.

Student Services (http://www.csuchico.edu/current-students)
Student services are designed to assist students in the development of their full academic potential and to motivate them to become self-directed learners. Students can find support for services such as skills assessment, individual or group tutorials, subject advising, learning assistance, summer academic preparation and basic skills development.

Americans with Disabilities Act (http://www.csuchico.edu/arc)
If you need course adaptations or accommodations because of a disability or chronic illness, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Please also contact Accessibility Resource Center (ARC) as they are the designated department responsible for approving and coordinating reasonable accommodations and services for students with disabilities. ARC will help you understand your rights and responsibilities under the Americans with Disabilities Act and provide you further assistance with requesting and arranging accommodations.

Accessibility Resource Center
530-898-5959
Student Services Center 170
arcdept@csuchico.edu

Student Learning Center (http://www.csuchico.edu/slc)
The mission of the Student Learning Center (SLC) is to provide services that will assist CSU, Chico students to become independent learners. The SLC prepares and supports students in their college course work by offering a variety of programs and resources to meet student needs. The SLC facilitates the academic transition and retention of students from high schools and community colleges by providing study strategy information, content subject tutoring, and supplemental instruction. The University Writing Center has been combined with the Student Learning Center.

(Schedule next page)
# Schedule

*(Note: subject to change with fair notice.)*

Scheduled readings are from Lieu & Sorby Text

<table>
<thead>
<tr>
<th>TERM WEEK</th>
<th>Week Of</th>
<th>Planned Topics</th>
<th>Reading</th>
<th>Work Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>21-Jan</td>
<td>Introduction to Engineering Graphics and Sketching</td>
<td>Chapter 1</td>
<td></td>
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<tr>
<td>2</td>
<td>28-Jan</td>
<td>Pictorial Drawings, Sketching, and Visualization <strong>HW 1</strong></td>
<td>Chapters 2, 3, and 9</td>
<td>PSVTR Example, Pre-Test</td>
</tr>
<tr>
<td>3</td>
<td>4-Feb</td>
<td>Setting up an Engineering Drawing <strong>HW 2</strong></td>
<td>Chapters 8 and 14</td>
<td>HW 1, PSVT:R Test A, PSVT:R Test B</td>
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<tr>
<td>4</td>
<td>11-Feb</td>
<td>Dimensioning</td>
<td>Chapter 12</td>
<td>HW 2, PSVT:R Test C</td>
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<tr>
<td>5</td>
<td>18-Feb</td>
<td>Creativity and the Design Process</td>
<td>Chapter 4</td>
<td>PSVT:R Test D</td>
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<tr>
<td>6</td>
<td>25-Feb</td>
<td>Fabrication Processes <strong>HW 3</strong></td>
<td>Review PPT</td>
<td>PSVT:R Test E</td>
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<tr>
<td>7</td>
<td>4-Mar</td>
<td>Solid Modeling, Assembly Modeling, and Design Analysis</td>
<td>Chapters 5, 6, and 7</td>
<td>HW 3, PSVT:R Test F</td>
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<tr>
<td>8</td>
<td>11-Mar</td>
<td><strong>SPRING BREAK</strong></td>
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<td>9</td>
<td>18-Mar</td>
<td>MIDTERM EXAM</td>
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<tr>
<td>10</td>
<td>25-Mar</td>
<td>Tolerances</td>
<td>Chapter 13</td>
<td>PSVT:R Advance Test A</td>
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<tr>
<td>11</td>
<td>1-Apr</td>
<td>Auxiliary and Section Views <strong>HW 4</strong></td>
<td>Chapters 10 and 11</td>
<td>PSVT:R Advance Test B</td>
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<tr>
<td>12</td>
<td>8-Apr</td>
<td>GD&amp;T</td>
<td>Chapter 13.06 to 13.9</td>
<td>HW 4, PSVT:R Advance Test C</td>
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<td>13</td>
<td>15-Apr</td>
<td>Clearances, and fits <strong>HW 5</strong></td>
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<td>PSVT:R Advance Test D</td>
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<tr>
<td>14</td>
<td>22-Apr</td>
<td>Fasteners</td>
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<td>PSVT:R Advance Test E</td>
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<tr>
<td>15</td>
<td>29-Apr</td>
<td>Review, Potpourri <strong>HW 6 (EC)</strong></td>
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<td>HW 5, PSVT:R Advance Test F</td>
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<td>16</td>
<td>6-May</td>
<td><strong>FINAL EXAM (Unofficial Date)</strong></td>
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<td>HW 6 (EC), PSVT:R Post Test</td>
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