Moberly Area Community College  
Common Syllabus

AMT250 Applied 3D Design & Printing  
Current Term

Instructor:
Office number:
Office hours:
Response Time: I typically respond to student emails within 24 hours, Monday through Friday.

Catalog Description: AMT250 Applied 3D Design & Printing (2-2-3)
This course is designed to provide the students with an understanding of design concepts and processes involved in developing a sound product. The student will participate in solving design problems following the proper process and document their solutions as they develop a product. The student will understand the tools needed to develop an efficient design process regardless of the product being developed. Products will be designed utilizing 3D Models which will then be developed into prototypes.

Prerequisite/Co-requisite:
MTH130 Technical Mathematics or MTH140 College Algebra or MTH142 Quantitative Reasoning and AMT211 Computer Aided Design II.

Text(s):

Other Required Materials:

Purpose of Course:
A course designed to build on skills the student acquired in previous classes. This course will take the student further into designing for industry.

Course Objectives:
Upon successful completion of this course, students will be able to:
1. Understand how to measure the design process with product cost, quality, and time to market.
2. Identify the many solutions for design problems and the basic actions of problem solving.
3. Understand the importance of product function, behavior and performance.
4. Define the different types of mechanical design problems and the constraints, goals, and design decisions that apply including cost, quality, and time to market.
5. Recognize the value of information.
6. Work on an engineering design team in order to solve design problems and recognize the need for communication during the design process.
7. Understand and apply the different aspects of a design plan.
8. Determine who the customer is and be able to recognize the competition.
9. Identify and apply basic methods of generating concepts.
10. Apply concept evaluation procedures.
11. Work closely with a design team in completing a product design phase and generate a product.
12. Understand and be able to complete a product evaluation for performance and the effects of variation.
13. Determine a product evaluation for cost, manufacture, and assembly and other measures.
14. Recognize proper documentation and communication involved in launching and supporting a product.
15. Identify and utilize engineering change orders.

Course Content:
Unit 1: Why Study the Design Process
Unit 2: The Engineering Design Process
Unit 3: Development of the Team
Unit 4: Drawing and Documenting
Unit 5: Reverse Engineering
Unit 6: Investigation and Research for Design Development
Unit 7: Generating and Developing Ideas
Unit 8: Testing and Evaluating
Unit 9: Manufacturing
Unit 10: What Is The Difference Between A Jig And A Fixture?
Unit 11: Threaded Fasteners
Students will also learn and utilize SolidWorks software to complete design assignments.

Connection with Career and Technical Education (CTE) Outcome Statement:
In compliance with MACC’s CTE outcomes, the student who successfully completes this course will be able to:
• Students will demonstrate an understanding of discipline-related math and scientific principles.
• Students will think critically while systematically assessing problems, identifying issues and implementing solutions.
• Students will apply principles of professionalism and safety standards when entering the workforce.
• Students will demonstrate skill mastery and will pursue lifelong learning in their field while adapting to changing industry standards and following evidence-based practices.

ASSESSMENT OF STUDENT LEARNING

Grade Scale:
- A = 90 – 100%
- B = 80 – 89%
- C = 70 – 79%
- D = 60 – 69%
- F = 59% & Below

Assessment:
(State the way learning outcomes will be measured. They may be measured through, but not limited to, the following: objective and essay questions, papers, quizzes, oral presentations, class participation, small group work, and/or projects.)

Description of Major Assignment(s)/Project(s):

INSTRUCTOR POLICIES

Tardiness:
per instructor’s policy

Make-up and late work:
per instructor’s policy

Extra-credit work:
per instructor’s policy

Schedule of Student Assignments/Activities:
(Instructors will identify a Student Assignment/Activities schedule. Instructors have the prerogative to construct the schedule by class periods, weeks, or an overview of topics to be covered.)

Other:
List any other instructor policies

COLLEGE POLICIES

Attendance:
Students are expected to attend all class sessions for which they are enrolled. The College reserves the right to drop or withdraw students from courses due to lack of attendance.
Students need to be aware that dropping/being dropped from a course and their last date of attendance in the course may impact their financial aid.

MACC faculty are required to track attendance and report lack of attendance. An instructor must complete the appropriate steps to drop a student within one week following the student’s violation of the attendance policy. Additionally, a student’s attendance rate will be calculated based upon the first day the academic session begins (not the student’s date of enrollment in the course). If a student does not attend a course as defined below, the student will be dropped as “Never Attended.”

**Term Length Drop Calculations**

- **16-week:** Any student who misses two (2) consecutive weeks of class will be dropped from the course by the instructor unless acceptable justification is provided by the student and the student still has the opportunity to be successful in the course.

- **8-week:** Any student who misses one (1) consecutive week of class will be dropped from the course by the instructor unless acceptable justification is provided by the student and the student still has the opportunity to be successful in the course.

- **4-week:** Any student who misses two (2) consecutive days of class will be dropped from the course by the instructor unless acceptable justification is provided by the student and the student still has the opportunity to be successful in the course.

- **Intersession:** Any student who misses one (1) day of class will be dropped from the course by the instructor unless acceptable justification is provided by the student and the student still has the opportunity to be successful in the course.

Acceptable justification may include, but is not limited to, family emergencies, illness or injury, college-approved co-curricular and extra-curricular activities, and religious holidays.

**Definition of Course Attendance**

<table>
<thead>
<tr>
<th>In Seat Course</th>
<th>Physical ly attending scheduled, face-to-face, class meetings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtual Course</td>
<td>Being present, via appropriate platform, for scheduled class meetings/activities</td>
</tr>
</tbody>
</table>
| Hybrid Course | Physically attending scheduled, face-to-face, class meetings and active participation in the online portion of the course which may include any or all of the following:  
• Completion of quizzes or exams during class meetings and online  
• Submission of assignments during class meetings and online  
• Participation in discussions during class meetings and online |
| Online Course | Active participation in an online course includes the following:  
• Completion of quizzes or exams  
• Submission of assignments  
• Participation in threaded discussions |

Simply logging into the Learning Management System (Canvas) and/or accessing the course and course related material does not constitute active participation for the online component of hybrid courses or for online courses. (*Policy Handbook, G.040*)

**Academic Dishonesty:**
MACC board policy is as follows: “Academic dishonesty by students damages institutional credibility and unfairly jeopardizes honest students; therefore, it will not be tolerated in any form.” Forms of academic dishonesty include but are not limited to the following: violations of copyright law, plagiarism, fabrication, cheating, collusion, and other academic misconduct. Incidents of dishonesty regarding assignments, examinations, classroom/laboratory activities, and/or the submission of misleading or false information to the College will be treated seriously. The procedure for handling academic dishonesty is outlined in the Student Handbook (*Policy Handbook G.020*). In cases of alleged academic dishonesty, the burden of proof is on the student, not on the instructor.

**Recording Class Sessions Using Zoom:**
The privacy of students is a priority in live or virtual meetings. Recordings of lectures or class meetings that share student information constitute an educational record and are protected under FERPA. Instructors may share recordings within the course section where they were originally recorded and only with the students enrolled in the section. Documented consent from each student identified in the recording is required to distribute outside of the course where it was originally recorded, or student identity must be redacted.

**Student Email:**
MACC Mail is the official student email system at MACC. Official college communication is sent via this email system. Students are responsible for checking their MACC Mail account regularly. Students may also receive notifications and reminders from MACC through the online learning platform. However, students should remain aware that the online learning platform messaging system and MACC Mail (student email) system are two separate systems.
**ADA Statement:**
Students who have disabilities that qualify under the Americans with Disabilities Act may register for assistance through the Office of Access and ADA Services. Students are invited to contact the Access Office to confidentially discuss disability information, academic accommodations, appropriate documentation and procedures. For more information, please call either the Moberly office at (660) 263-4100 Ext. 11240 or the Columbia office at (573) 234-1067 Ext. 12120, or visit our web page at http://www.macc.edu/index.php/services/access-office.

**Title IX Statement:**
MACC maintains a strict policy prohibiting sexual misconduct in any form, including sexual harassment, sexual discrimination, and sexual violence. All MACC employees, including faculty members, are considered mandated reporters of sexual misconduct and as such are expected to contact the Title IX Coordinator when they become aware, in conversation or in writing, of an incident of sexual misconduct. For more information on this policy or to learn about support resources, please see http://www.macc.edu/sexual-misconduct-policy or contact Cheryl Lybarger, MACC’s Title IX Coordinator, at 660-263-4110, Ext. 11369 or CherylLybarger@macc.edu.