

Product Design Fundamentals

MCCT - 2650 101

Course Description

Product Design is the process of applying principles, experience, and judgment to the development of a technical product to meet a need. Turning ideas into a design, develop detailed part and assembly drawings, implementation, and evaluation will incorporate problem identification. Sketching, gears/cams/shafts, Tolerances, rapid prototyping, and additive manufacturing concepts will be presented.

Prerequisite(s): EDDT 1040 with a C or better grade or EDDT 1050 with a C or better grade or EDDT 2710 with a C or better grade

Semester(s): Fall & Spring

Course Student Learning Outcomes

- Demonstrate knowledge of 3-D software including: part creation, assemblies, presentations, and 3-D to 2-D drawings.
- Demonstrate knowledge of content libraries including: fasteners, shafts, fittings, and structural shapes.
- Demonstrate knowledge of the design process including: brainstorming, identification of problem, market research, solutions, implementation and evaluation.
- Demonstrate knowledge of drive mechanisms including: gears, cams, and shafts.
- Demonstrate knowledge of constraints including: assembly, motion, drive, and adaptive design.
- Demonstrate knowledge of rapid prototyping including: designing , modeling, and printing a product of their own choice.

- Demonstrate knowledge of advanced Dimensioning including: class of fits, and tolerances for assemblies.

Engagement Plan

Example language:

- I will respond to email within [2 days]. I will offer feedback on major assignments within [1]. The best way to contact me is via the Canvas Inbox, as I will prioritize this email over other modes of communication.
- In this course I will be posting interactive announcements which will offer specific opportunities for class questions and extra credit every other week.
- Additionally, I will be participating in the discussion forums with you to share my perspective within the discipline and to offer some nuances of interpretation that may not be present in your textbook.
- Lastly, we'll be holding small group Q & A sessions, where we can learn from our peers (and faculty) on some of the more difficult units within the course.

Keys for Success (how to succeed in the course)

success in this course will be dependent on joining the class discussions, asking questions, building projects.

Brief Description of Assignments/Exams

assignments/ exams will be done in class. after class hours the classroom and I will be available to for any extra time you need, along with any help I can give.

Assignment Schedule

Due Date	Assignment Name	Assignment Type	Points
	Fail Forward	Discussion	0

Due Date	Assignment Name	Assignment Type	Points
	Introduce Yourself	Discussion	0
	Week 1	Quiz	5
	Week 1 Part Design Basics	Assignment	20
	Week 2	Quiz	5
	Week 2 Assembly	Assignment	25
	Week Two/Three	Discussion	0

Grading Scale

A	93-100
A-	92-90
B+	87-89
B	83-86
B-	82-80
C+	77-79
C	73-76
C-	72-70
D+	67-69
D	63-66
D-	62-60
E	59-0

How to Navigate to Canvas

Institutional Policies

As members of our academic community, we would like to invite you to review the Institutional Syllabus which covers important policies and procedures. This document contains important links for students on the code of student rights and responsibilities, academic integrity, and grading policies, Title IX and other important acknowledgements. By familiarizing yourself with this information, you can help us create a safe and respectful environment for everyone.

For more information, navigate to the Institutional Policies tab on the [Institutional Syllabus](#) page.

Learning Support and Tutoring Services

We are pleased to offer a range of tutoring and learning support services to help you achieve your academic goals. Whether you need assistance with a specific subject or want to improve your study skills, you have many options for tutoring or other support.

To learn more about the services we offer and how to access them, visit the [Institutional Syllabus](#) page under the Tutoring and Learning Support tab. We encourage you to take advantage of these resources to help you succeed in your studies. If you have any questions or would like to schedule a tutoring session, please don't hesitate to reach out to us. We are here to support you in any way we can.

Advising and Counseling Support Services

At our institution, we are committed to supporting your academic and personal growth. That's why we offer a range of advising and counseling services to help you navigate the challenges of college life. To learn more about the resources available to you and how to access them, visit the [Institutional Syllabus](#) page under the Advising and Counseling Support Services tab. Our advising team and the support centers across campus are here to support you in achieving your goals and overcoming any obstacles you may face.

Student Academic Calendar

As students you should be aware of all important dates in the semester, such as the day that courses begin and end, as well as the drop date and the last day to withdraw. To learn more about those dates, navigate to the Student Academic Calendar below:

[SLCC Student Academic Calendar](#)