

University of Arkansas College of Engineering

MEEG 5163 - Advanced Product Design

Instructor: David Jensen

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Course Description

This course is a deep-dive into the scientific theories, methods and tools that support and enable the engineering design of products. Design is a term with many different meanings dependent on the context. Within the context of engineering, we mean the process of decisionmaking that leads to the development of a solution (typically a technical and physical product) to meet stakeholder needs. This course will prepare you utilize various tool and methods to design novel and innovative solutions for technical products. Additionally, this course serves as an overview of some of the main branches of research that are conducted in the domain of design science.

Free Text: Authored by: Jonathan Cagan

[https://figshare.com/articles/Creating Breakthrough Products Revealing the Secrets that Drive Global Innovation/5788092](https://figshare.com/articles/Creating_Breakthrough_Products_Revealing_the_Secrets_that_Drive_Global_Innovation/5788092)

Course Objectives:

By the end of this course, you will develop the skills required to:

1. Define, differentiate, and compare different descriptive models of engineering design.
2. Describe and compare engineering design tools and methods.
3. Select and apply appropriate design methods and tools to develop a prototype for an engineering design opportunity.

Grading:

According to the UA instructions for reporting final grades, they generally will reflect the following:

A – Outstanding achievement (90.0%+)

B – Good achievement (80.0%+)

C – Average achievement (70.0%+)

D – Poor, but passing work (60.0%+)

F – Failure, given for unsatisfactory work (any grade below 60%) **Grade**

Breakdown:

Quizzes	25%	120 points
Discussion Boards	25%	120 points
Assignments	25%	120 points
Final Project	25%	120 points
Total	100%	480 points

Final Project:

A major portion of this course is based on using the presented tools and methods to develop a concept solution for a realistic design opportunity. The project consists of all of the steps needed to systematically develop the concept as well as a reflection on the particular tools and methods used.

Instructor Feedback and Response:

I generally respond to emails within 24 hours during the week and within 48 hours on weekends. Grades for assignments are usually available within 72 hours after the due date, but large projects or complex activities could take longer.

Students with Disabilities:

If you need to request reasonable accommodations for this class due to a disability, you must first register with the [Center for Educational Access \(CEA\)](#) and contact me via email.

Academic Dishonesty:

"Each University of Arkansas student is required to be familiar with and abide by the University's 'Academic Integrity Policy' which may be found at [The Office of the Provost](#) website. Students with questions about how these policies apply to a particular course or assignment should immediately contact their instructor."

Dropping this Class:

Situations can arise that warrant dropping a class. However, please see me before you drop the class so we can properly assess whether this is in your best interest. Often times things may not be as bad as they seem. Please do not drop without talking to me first.

Late Work:

Submission of discussion board posts, quizzes, assignment and projects after the posted deadline will not be accepted unless the student has made alternative arrangements with the professor prior to expiration of the deadline.