Department of Mechanical Engineering Technology

Course number/name:

MECH 4710: Product Design II

Credits/contact hours:

3 course credits, 2 class hours, 2 lab hours

Instructor/coordinator:

Angran Xiao, Associate Professor of Mechanical Engineering Technology

Text book/title/author/year

Product Design and Development, 5th Edition, Karl Ulrich, Steven Eppinger, ISBN 0073404772

Specific course information

Catalog description:

This is the second course in product design. It covers more advanced and in-depth topics in product design and development. Topics include modeling of product metrics, design for manufacturing, design for the environment, analytical and numerical model analysis, physical prototypes, physical models and experimentation, and design for robustness. Design projects will be used to demonstrate the implementation of these design ideas.

Pre/Corequisites:

MECH3610

Required/elective/selected elective:

Elective for Mechanical Engineering Technology and Industrial Design Technology

Course learning objectives:

1. Understand and use metrics for product modeling.
2. Evaluate factors related to manufacturing and assembly of a product. Understand environmental friendly factors for new products.
3. Create analytical and numerical model solutions.
4. Create physical prototypes and perform experimentation.

Course addresses ABET student outcomes: SO1, SO2, SO3, SO4, SO5

Brief list of topics to be covered:

- Lecture: Product architecture
- Lecture: Industrial design
- Lecture: Design for environment
- Lecture: Design for manufacturing
- Lecture: Prototyping

- Lecture: Prototyping
- Lecture: Robust design
- Lecture: Patent and intellectual property
- Lecture: Preparation of final project
- Final Exam and Design Project Due