

## IM 542E- Reverse Engineering

---

**Hour:** Lecture: 2 Hrs.

Tutorial: 2 Hrs.

Credit: 3.

**Coordinator:** Bassem Roushdy

### **Text Book:**

- Kevin Otto and Kristin Wood, “Product Design”, Prentice Hall, *latest edition*

### **Reference Books:**

- Karl Ulrich and Steven Eppinger, “Product Design and Development”, McGraw-Hill, *latest edition*

### **Specific course information**

- a. The course provides an introduction to product development with reverse engineering concept, product development tools, definition of customer needs, product architectures. It also covers product metrics, design for manufactures and assembly, design for environment, and several case studies
- b. Prerequisite: 126 Credit hours
- c. Designation: Selected Elective

### **Specific goals for the course:**

- An ability to apply knowledge of mathematics, science, and engineering.
- An ability to identify, formulate, and solve engineering problems.
- The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context

### **Course instruction outcomes:**

- The students will be familiar with reverse engineering in product development and design.
- The students will be familiar with manufacturing, materials selection, measurements and other applications through a semester-long, step-by-step project

### **Topics Covered:**

- Introduction and overview.
- Introduction to product development phases.
- Product development process tools
- Scoping product development
- Understanding customer needs
- Establishing product functions
- Product teardown and experimentation.
- Benchmarking and establishing engineering specifications

- Product architecture
- Generating concepts
- Design for manufacturing and assembly

Course / credit hours	Math & Basic Sciences	Engineering Topics	General Education
Reverse Engineering /3		3	