

MEC 696 - Special Problems in Mechanical Engineering

The State University of New York, Korea

Spring 2019

Subtitle: Innovation & Entrepreneurship in 4th Industrial Revolution

Instructor: Prof. Minyang Yang,

myyang@kaist.ac.kr

Lectures: Monday and Wednesday @ 10:30-12:00 (TBA)

Textbook: Course material

Reference: The innovator's solution: creating and sustaining successful growth by Clayton Christensen, Harvard Business School Press. The Fourth Industrial Revolution by Klaus Schwab, World Economic Forum.

Office Hours: Monday and Wednesday @ 14:30-16:00 (or by appointment)

Course Description:

This course is intended to strengthen student's innovation capability and to encourage entrepreneurship in 4th Industrial Revolution. At first, from the historical perspective, the First, Second, Third and Fourth Industrial Revolution will be explained with characteristics, processes and effects of each Industrial Revolution. And the relationship between industrial revolution and innovation will be told. Definitions, characteristics and types of innovation will be explained. Origins of innovation will be studied from the history of innovation. Students will learn the problem-solving process, and apply it to innovation. The course will cover the entire process of innovation.

During the semester, each student will select an innovation project for which they will write a proposal. The topic of the proposal has to be approved by the instructor before the proposal is submitted. A final report and presentation are due at the end of the semester on a day to be announced.

Topics:

- Introduction
- Industrial Revolution
- Characteristics of 4th Industrial Revolution
- Definition of Innovation
- Difference between Renovation and Innovation
- Types of Innovation

- Value Creation
- Origin of Innovation
- Problem-solving process
- Application of problem-solving process to innovation
- Innovation of Future
- Entrepreneurship

Grading:

Homework	30%
Quiz (two)	30%
Project (proposal, presentation and final report)	30%
Attendance	10%

Policies:

- Homework assignments will be posted on the Blackboard.
- The Blackboard can be accessed at <http://blackboard.stonybrook.edu/>
- The time and details about exams will be announced in the class (and also posted on the Blackboard).
- It is the responsibility of students to make sure that they can access the Blackboard and they have a working email registered with it. The blackboard should be checked frequently for new materials.
- Quiz will be closed book and note.