This mission of Department of Industrial and Information Management is to cultivate industrial and information management professionals who possess TIP (Technological knowledge, Innovative foundation, and Perceptive learning).

Graduate Program Learning Goals (goals covered by this course are indicated):

- Undergraduate students should be able to communicate effectively verbally and in writing.
- Undergraduate students should solve strategic problems with a creative and innovative approach.
- Undergraduate students should demonstrate leadership skills and ethics demanded of a person in authority.
- Undergraduate students should possess a global economic and management perspective.
- Undergraduate students should possess the necessary skills and values demanded of a true professional.

Instructor:
Dr. Tai-Yue (Jason) Wang, Room 61314, Industrial and Information Management Building, email: tywang@mail.ncku.edu.tw

Textbook:
We will use Minitab software in this class. Please download your trial version of Minitab on http://minitab.com.tw/Downloads.html

About the Course
This is a basic course in designing experiments and analyzing the resulting data. It is intended for managers, engineers, physical/chemical scientists and scientists from other fields such as biotechnology and biology. The course deals with the types of experiments that are frequently conducted in industrial settings. The prerequisite background is a basic working knowledge of statistical methods.

Prerequisite:
Statistics or Statistical Methods
Course Outline
Introduction to DOX
Statistics review
Introduction to the analysis of variance (ANOVA)
Choice of sample size in designed experiments
The randomized complete block design (RCBD)
RCBDs, Latin squares, etc.
Introduction to factorial designs
2^k factorial designs
Blocking and confounding in two-level factorial designs
2^{k-p} fractional factorial designs, introduction
Response surface methods and designs (an overview)
Random factors in experiments

Grading

quiz 20%
Final 20%
Homework 20%
Class Participations 20%
Term project 20%

Term Project
The term project is performed in teams of up to 2 to 3 people. The project consists of planning, designing, conducting and analyzing an experiment, using appropriate DOX principles. Two written interim project reports are required, along with a final written project report. The dates these items are due is on the course outline above.
Grading Policy for AACSB Multiple Assessment:

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<thead>
<tr>
<th>Category</th>
<th>Component</th>
<th>Quiz (20%)</th>
<th>Final (20%)</th>
<th>Term project (20%)</th>
<th>Class participation (20%)</th>
<th>Homework (20%)</th>
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<td>COMMU</td>
<td>☑ Oral Commu./ Presentation</td>
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<td>☑ Written Communication</td>
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<td>CPSI</td>
<td>☑ Creativity and Innovation</td>
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<td>☑ Leadership &amp; Ethic</td>
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<td>☑ Social responsibility</td>
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<td>GLOB</td>
<td>☑ Global Awareness</td>
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<td>☐ Management Skills</td>
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The instructor reserves the right to adjust the grades. However, you are guaranteed that your grade will not be adjusted down.

Homework will be assigned from time to time and will be due in two weeks. No late homework will be accepted.

Pop quizzes will be given in class at any time. No-show will result in no grade for the quiz.

You will be responsible for any missing material due to your absences.