

IE 419 Course Syllabus

Instructor Information

Instructor: Dr. Andris Freivalds

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Teaching Assistant: Xiaomei Tan

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Office: 240 Leonhard Bldg.

Office hours: None specifically, please contact by email.

Course Description: Methods improvement, work measurement, and work design, applied to manufacturing and service industries, so as to increase productivity and improve worker health and safety.

Textbook: *Niebel's Methods, Standards and Work Design*, by A. Freivalds, 13th ed., McGraw-Hill, 2014.

Grading Policy

Table 1: Grading policy for the course

Midterm	28%
Final	28%
Case Studies (3 Reports at 8% each)	24%
Homework (10 at 2% each)	20%
Total	100%

Topic Outline

- Methods
- PERT/CPM
- Worker Machine Relationships
- Line Balancing
- Operation Analysis/Lean Manufacturing
- Plant Layout – Muthers SLP/SPIRAL
- Motion Study
- MTM-2
- Work Sampling
- Ethics
- Accident Prevention Theory

- Probability/Reliability
- Fault Tree Analysis Brown
- Cost-Benefit Analysis
- Workers Comp
- OSHA
- Hazard Control
- Falling Hazards
- Mechanical Hazards
- Pressure/Hazards
- Electrical Hazards
- Heat Hazards
- Fire Hazards
- Explosion Hazards
- Toxic Materials Hazards
- Confined Space Hazards
- Radiation Hazards
- Product Liability

Late Work

Late homework or reports will not be accepted, unless certified medical proof is given. If you are unable to attend the class at which the homework is due, it is your responsibility to submit it earlier. You may also submit your homework directly via email to axf@psu.edu.

Exam Policy

This course requires you to take exams on-line through Canvas. By enrolling in this course, you consent to the use of the proctoring software selected by your instructor, including but not limited to any audio and/or visual monitoring which may be recorded. Please contact me with any questions.

Exams are timed exams, and they are closed book, closed notes. Additional instruction will be provided before the exam.

Cheating Policy (straight from the [Penn State Principles](#))

Cheating, defined as any attempt to represent another person's (or lab group's) work as your own, will not be tolerated in this course. Prosecution will be carried out to the fullest extent. If cheating is suspected or observed, please report it to me -- this will be kept in the strictest confidence.