



# Engineering and Technology Management

## COURSE SYLLABUS

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**Course Number:** E M 596

**Course Name:** Managing Work Design for Safety and Productivity

**Instructor:** David Paulus

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**Semester Credits:** 3

**Prerequisites:** None

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### Course Description and Objectives:

Managing Work Design for Safety and Productivity provides an integrated approach to time-and-motion studies, human factors, and ergonomics to design work that simultaneously improves both productivity and safety. This course teaches sound engineering methods using realistic standards to optimize work design.

### Course Topics:

- Plant Layout
- Manual Work Design / Motion study
- Anthropometry and Cumulative Trauma Disorders
- Work Environment: Illumination, Noise, Temperature, Ventilation, Vibration
- Human Factors: Human-Computer Interactions
- Visual & Auditory Displays and Processing
- Risk, Reliability, Hazard Control, and OSHA
- Time Studies
- Performance Ratings and Allowances
- Machine and Operator Standard Times (new and existing jobs)
- Indirect and Expense Labor Standards
- Wage Payment
- Management, Employee Motivation, and Human Interactions

### Textbook:

Niebel's Methods, Standards, and Work Design, 13<sup>th</sup> Edition, Andris Freivalds

### Grading:

Exam 1: 33% Exam 2: 33% Final Exam: 34%