

VIP 295 - 596 LEAN ENTERPRISE CONCEPTS of INDUSTRIAL ENGINEERING:

SYLLABUS: Old Computer Science Building Gradual School, Rm 1310

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Semester 20xx

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Office Hours; TBD

COURSE LEARNING OBJECTIVES: This is an advanced course in Industrial Engineering.

1. The student will demonstrate the ability to apply technical tools and knowledge to practical problem while assisting in actual projects throughout campus, solving problems in the work place.
2. The student will design, understand, and analyze selected aspects of existing projects defined for this purpose in our surroundings that are conceived, designed, and/or constructed using technological tools and methods” of industrial engineering Lean Enterprise concepts.

Course Learning Objectives:

The learning objectives of this course will ensure the student can apply Quantitative & Qualitative Problem Solving methods and techniques to: solve problems associated with the concepts listed in the syllabus above,

- Verbally, and visually present these mathematical concepts, numerically and symbolically.
 - Utilize mathematical methods to solve these problems.
 - Estimate and check the results of their computations.
 - Become acquainted with the limits of statistical & mathematical methods taught in this course.
3. Establish a functional understanding of industrial engineering concepts application.
 4. Attain functional, scientific and technical knowledge, and critical thinking skills, related to the industrial engineering profession, and potential preparation for graduate studies.
 5. Develop a balanced and integrated understanding of the concepts, theories, and methodologies used to plan, design, analyze, develop, organize, and industrial engineering operational tasks.
 6. Acquire a proficient knowledge of the key areas of industrial engineering listed within this document.

The student will perform the following to achieve this:

1. There will be homework assignments throughout the semester. The purpose of the HW is to give the student the opportunity to apply the industrial engineering concepts discussed in class. These exercises may involve minor experiments, internet searches, and the application of software such as Excel. Each assignment will be posted on Blackboard through the Assignments section. Assignment may be reviewed in class as time allows. The student will prepare a brief operations report (using MS Word) that summarizes the assigned problems, tasks and project. You may be asked to work in a group of three or four students on the exercises. The project will be submitted via Black Board turned in on the required due date will be accepted.
2. Evaluate the aspects of engineering alternatives in the operational decision making process and use these concepts and evaluation techniques to perform the analysis.
3. The student will also develop an understanding of the influence industrial engineering has upon the business, the organization, and the management decision making process,

TEXT: NA

GRADES: Homework (assignments- 15%, 15%, 20%, 20%);

Project (20%); Participation (5 @ 2pts each 10%),

- a.- Have to attend class and post to discussion board to participate (1 point per class),
- b.- Discussion exercises for participation credit,

COURSE SYLLABUS:

CONTENT	Suggested concepts
Week 1.	Manufacturing Engineering & Processes Design
Week 2.	Facilities & Locations.
Week 3.	Supply Chain and Logistics,
Week 4.	Quality Assurance
Week 5.	Project Management
Week 6.	Engineering Economics
Week 7.	Human Factors System Design
Week 8.	Spring Break extension
Week 9.	Risk & Experiments
Week 10.	Reliability
Week 11.	Operations Management
Week 12.	Operations Research
Week 13.	Introduction to System Design, Systems Simulation & Industrial Automation.
Week 14.	Course Summary

Learning Outcomes:

Students in this course will be able to display and relate the principles of industrial engineering concepts, requirements and constraints, through a scientific management decision process involving adjustments, and transactions of the industrial engineering design process. The learning objectives of this course will ensure the student can apply Qualitative & Quantitative Problem Solving methods and techniques to: solve problems associated with the concepts listed in the syllabus above,

- Verbally, and visually present these mathematical concepts, numerically and symbolically.
 - Utilize mathematical methods to solve these problems.
 - Estimate and check the results of their computations.
 - Become acquainted with the limits of statistical & mathematical methods taught in this course.
- (a) Gain the ability to apply knowledge of mathematics, science, and engineering to industrial engineering problems.
 - (b) Demonstrate the ability to create systems, components, or processes to meet realistic models of operational needs within given constraints,
 - (c) Areas of skill development include socio-economic, ecological, operational, ethical, health and safety, manufacturability, and sustainability
 - (d) The ability to work within multidisciplinary groups
 - (d) The ability to recognize, create, and solve industrial engineering problems
 - (e) Understand the professional and ethical obligations of an industrial engineer
 - (f) Successfully communicate industrial engineering concepts
 - (g) Demonstrate the ability to use the techniques, skills, and industrial engineering techniques necessary for The practice of industrial engineering profession.

Note: This is a guideline of the course content and syllabus. This outline is subject to change as determined by the instructor during the semester.

GENERAL NOTES: The course will be conducted using lecture and open discussions during scheduled classes. Homework, solutions to engineering problems will be required. This provides ample opportunity for learning, and also evaluation of the student's performance. Homework assignments will be due as posted on the course Black Board page on Assignments. The problem solutions should be presented in a clear format so computations can be evaluated easily. Prepared spreadsheet solutions and graphics will be accepted. Any notes and assumptions or summary comments should be included.

All homework and tests will be promptly graded. Late home works will not be accepted.

Two exams; a mid-term a final examination will be given under academic conditions, and will be administered in class and during finals week.

Homework assignments should be prepared individually, if not specifically designated as a group assignment. Although it is understood that collaboration with others on the homework may be educationally beneficial, when designated as an individual assignment each student must submit their own individual assignment material.

Fundamental Engineering Ethics require engineers to give proper credit for engineering work where credit is due.

Therefore, references should be cited on all written work to acknowledge the aid of other individuals and both published and unpublished references. "Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Any suspected instance of academic dishonesty will be reported to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at

<http://www.stonybrook.edu/uaa/academicjudiciary/> "

"The University at Stony Brook expects students to maintain standards of personal integrity that are in harmony with the educational goals of the institution; to observe national, state, and local laws and University regulations; and to respect the rights, privileges, and property of other people. Faculty is required to report disruptive behavior that interrupts faculty's ability to teach, the safety of the learning environment, and/or students' ability to learn to Judicial Affairs."

The University Senate Undergraduate and Graduate Councils have authorized that the following required statements appear in all teaching syllabi (graduate and undergraduate courses) on the Stony Brook Campus.

Americans with Disabilities Act:

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, room128, (631) 632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential.

Academic Integrity:

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at <http://www.stonybrook.edu/uaa/academicjudiciary/>

Critical Incident Management:

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures.