ISE 319
Facilities Planning and Materials Handling
Fall Semester 2017

Instructor: L. Butler - 210 Mohler Lab (610-758-6219, lrb4@lehigh.edu)
Office hours: M-W 10-11 and by appointment
TA: to be announced

Course Description: Facilities planning including plant layout design and facility location. Material handling analysis including transport systems and storage systems. Utility planning and sizing with exposure to the applicable codes. Prerequisite: ISE 131 or consent of department chair.

Course objectives: Upon completion of this course, students will:
- be able to describe the terminology of facilities planning, plant layout, and facilities location.
- be able to develop a plant layout design using one of the computer-aided plant layout design software packages (BlocPlan)
- be able to describe the terminology and technology of the various material handling and storage methods and systems
- be able to use appropriate mathematical models to predict the performance of various material handling systems (e.g., automated guided vehicle systems, conveyor systems) and storage systems (automated storage and retrieval systems, carousel storage systems)
- be able to properly size an electrical service, gas service and plumbing service based on the appropriate regulatory codes
- be aware of the issues involved in the accessibility requirements of the building codes.
- have the opportunity to enhance oral communication skills through presentation of homework problems


Grading Policy: The grade in the course will be based on the student's performance in two hour quizzes, the final exam, and other assigned work (project problems and laboratory exercises). A point scoring system will be used in which each quiz will be worth 200 points, the final exam will be worth 300 points, and project exercises will total 200 points. In addition, bonus point opportunities will be offered during the semester. Students will be graded according to the total points they accumulate in the scoring system.

Hour Quiz Policy: Two one-hour quizzes will be offered during the semester. No make-up quizzes will be given to students who miss the regular quizzes. For students who take both quizzes and the project, the lowest quiz grade will be dropped and the average of the quiz and the project will be substituted in its place. For students who miss one hour quiz, the average of the quiz and the project will be counted for the missing grade. For students missing more than one quiz, 50% of the percentage score on the final exam will be used as the missing hour quiz grades.

Hour Quiz Formula Sheet: Each student will be allowed to use a formula sheet that he/she has prepared in advance of each hour quiz. A one-page formula sheet is recommended, but the formula sheet can consist of multiple pages if needed. The same formula sheet prepared for the hour quizzes can be used for the final exam. The formula sheet should contain only equations and formulas. However, up to three words can be used to identify each equation and symbol, and the proper units can be listed for each symbol. There are to be no example problems, no sketches, no diagrams, no lists, or other text material on the formula sheets. Formula sheets will be turned in with the quiz. If a formula sheet is found to be in violation of the guidelines, no credit will be given for the quiz or exam problem to which the violation refers.

Homework Policy: Practice problems will be assigned about one week in advance of their due date. These problems will be demonstrated and discussed in class and will not normally be turned in. Individual students will be assigned to present problem solutions in class. Up to 5 bonus points will be awarded for each practice problem presented in class, to be added to the student's total point score for grading purposes. On a
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