MSE403CS – FACILITIES PLANNING & DESIGN (3 units)
CSUN - Fall 2025, Ticket 20973, Mon./Wed.: 1:00-2:15 p.m., Room JD-1126

Instructor Ghassan "Gus" H. Elias: BS/MS; Industrial/Manufacturing Systems Engineering.
- Expertise: Engineering Consulting, Decision-Making, Facility Planning, Risk & Cost Analysis. Industrial Safety and Material Control: global certification programs for commissioning electronic & pneumatic devices in General (Non-Hazardous) Locations, Hazardous 'Classified' Areas and Potentially Explosive Atmospheres.
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- Faculty Office: JD-3308; Office Hours: Mon/Wed, 12:00-1:00 p.m. & by appt.
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Textbook ***"Facilities Planning" -*** Tompkins/White/Bozer/Tanchoco
Publisher: John Wiley & Sons, **4th edition**, 2010, ISBN: **978-0-470-44404-7**

Lecture Slides Additional lecture material is offered by the instructor. The PowerPoint presentations for each chapter are available on my CSUN web-page:
http://www.csun.edu/~ghe59995/
So that you take "helpful" notes during the class lectures, please print the assigned modules and have the slides handy during the lecture session throughout the semester.

Catalog Description Prerequisite: MSE 248/L or equivalent, or graduate standing. Basic concepts in the planning and design of manufacturing facilities; product analysis, manufacturing processes and equipment selection, and schedule design; flow, space, activity relationships and space planning; location and layout; material handling systems and facilities planning models. Offers a community service opportunity with activities related to concepts and theories presented.

COURSE OBJECTIVES

This course will contribute to ***your***:

- Knowledge of, and ability to integrate product, process, and schedule design information to plan, analyze, and design new or modify existing manufacturing and service facilities.
- Knowledge of, and ability to define personnel requirements to design new or modify existing manufacturing and service facilities.
- Knowledge of, and ability to solve line balancing problems utilizing alternative priority rules.
- Knowledge of, and ability to apply models and analytical procedures for the study of facilities layout planning.
- Knowledge of and ability to use current methodology to evaluate and design material handling.
- Knowledge of, and ability to describe the features and particulars of computerized heuristic plant layout systems.
- Knowledge of, and ability to recognize fundamentals of storage and warehousing requirements.
- Knowledge of , and ability to formulate and solve single facility location problems.
- Knowledge of , and ability to prepare a written project report for a newly designed/modified facility.

STANDARD OPERATING PROCEDURES:

1. Class members are expected to maintain personal and professional standards consistent

with the Code of Ethics of the national Society of Professional Engineers, the Preamble and Fundamental Canons of which are as follows:

Engineering is an important and learned profession. As members of this profession, engineers are expected to exhibit the highest standards of honesty and integrity. Engineering has a direct and vital impact on the quality of life for all people. Accordingly, the services provided by engineers require honesty, impartiality, fairness and equity, and must be dedicated to the protection of the public health, safety, and welfare. Engineers must perform under a standard of professional behavior that requires adherence to the highest principles of ethical conduct. Engineers, in the fulfillment of their professional duties, shall:

- ***Hold paramount the safety, health and welfare of the public.***
- ***Perform services only in areas of their competence.***
- ***Issue public statements only in an objective and truthful manner.***
- ***Act for each employer or client as faithful agents or trustees.***
- ***Avoid deceptive acts.***
- ***Conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation, and usefulness of the profession.***

2. Students must take **ORIGINAL NOTES** and submit **ORIGINAL WORK** only.

3. Class members are expected to **attend ALL class** sessions, **promptly** & **entirely**.

4. Class members are **responsible** for the course material, reading assignments, class presentations, discussions, and practice problems.

5. ***Tardy/Late submissions are unacceptable*…..NO EXCEPTIONS!**

6. Class members **will** always be **considerate & respectful** to their colleagues.

7. Pagers, Cellular Phones, Alarms, etc…***MUST BE TURNED OFF*** during class.

8. **IMPORTANT: The use of PC laptops, mobile phones, video recorders, cameras and/or internet-ready devices during the exams, quizzes and class lecture sessions is strictly prohibited. The exchange of notes, calculators and/or textbooks during the exams and quizzes is also prohibited. Violation of this policy will result in the student's dismissal from the class and the issuance of an "F" grade for the course. No EXCEPTIONS !!**

NOTE #1: Activate **and** use **solely** your CSUN email address for ALL academic correspondences. Do not use your personal email address to communicate with the instructor. Messages from non-CSUN email addresses will **NOT** be acknowledged. Instructor will only utilize SOLAR's email database to communicate with class members.

NOTE #2: **F**ailure to formally drop a course within the allotted time frame by CSUN will result in the issuance of a **"WU"** grade which is equivalent to **"F"**, thus detrimentally affecting your GPA.

The use of mobile phones is prohibited during lectures & exams. No Exceptions!!!

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COURSE SCHEDULE

(Tentative guidelines – the schedule may change if deemed necessary)

Depending on the progress of the course material, the syllabus (dates, topics, assignments & exams) ***may change*** if deemed necessary.

Note 1: Team presentations will cover different relevant topics.

Note 2: The PowerPoint lecture presentations for each chapter are available on my CSUN web-page:

http://www.csun.edu/~ghe59995/

So that you take "helpful" notes during the class lectures, please print the assigned modules and have the slides handy during the lecture session throughout the semester.

Date	Topics	Homework Assignments (TBA in class)
Wk. 1	Introduction to Facilities Planning	Course Introduction & Team Selection
Wk. 2	**More on Facilities Planning** Product, Process and Schedule design	Term Project Group Formation
Wk. 3	Flow, Space, and Activities	Term Project Topic Selection
Wk. 4	Personnel Administration & Management	
Wk. 5	Material Handling	
Wk. 6	Layout design	****** Project Status Report Due******
Wk. 7	Facility Functions	**MIDTERM EXAM REVIEW**
Wk. 8	**Midterm Exam (35%)** **Open Book/Open Notes**	**Given in 2 sessions - All covered material** **Will be split into 2 exams (each is worth 17.5%)**
Wk. 9	**Midterm Exam Graded & Returned**	**Review Test Solution**
Wk. 10	Manufacturing Systems	
Wk. 11	Facility Systems	
Wk. 12	Facilities Planning Models / Globalization & Commerce	
Wk. 13	Selecting Facilities Plans	
Wk. 14	Team Presentations – Selected Groups & Topics	
Wk. 15	Team Presentations – Selected Groups & Topics	^ ******Term Project Final Report Due****** ^ "**TYPED**" ***Self & Peer Evaluation Form Due***
Wk. 16	**Course Review & Wrap-up**	**FINAL EXAM REVIEW**
Wk. 17	**FINAL EXAM (35% - COMPREHENSIVE)** **OPEN BOOK/NOTES**	**Wednesday Dec 17th, 12:45 pm – 2:45 pm**

COURSE EVALUATION / GRADE SCALE

((Refer to the last page for more information on the grading criteria.))

(10 pts) **Homework & discussion topics (to be announced via CANVAS). *Late submission is not allowed!* Class participation & prompt attendance are mandatory.**

(35 pts) **Midterm Exam (assigned chapters) -- based on class discussions, homework & reading assignments. Will be split into 2 sessions/exams (each is worth 17.5%).**

Format: True/False, Multiple Choice, & Essay Questions.

Open Book/Open Notes: ONLY ORIGINAL WORK/NOTES ALLOWED!

(20 pts) **Team presentation on project topic addressing an aspect of Engineering and Technology Management. Submittal of Self/Peer Evaluation Form is mandatory.**

(35 pts) **Final Exam (comprehensive) – based on class discussion, lectures, handouts, homework and reading assignments.**

Format: True/False, Multiple Choice, & Essay Questions.

Open Book/Open Notes: ONLY ORIGINAL WORK/NOTES ALLOWED!

Letter-Grade Scale (*NO CURVING!*):

$A \geq 92$	$88 \leq A- < 92$		$85 \leq B+ < 88$
$80 \leq B < 85$	$78 \leq B- < 80$		$75 \leq C+ < 78$
$70 \leq C < 75$	$68 \leq C- < 70$	$60 \leq D < 68$	$F < 60$

Note:

By the third-fourth week into the semester, groups consisting of 4-to-6 members will be formed on a random basis. Group research assignments will be given throughout the semester along with a final term project. Periodic class presentations should be expected.
Attend ALL lectures promptly --- Be motivated.

***** This course syllabus is your contract with the CECS, MSEM and the instructor. Students must read the syllabus thoroughly and adhere fully to ALL of the stated terms and listed guidelines. No Exceptions! *****

HOMEWORK GUIDELINES & ASSIGNMENTS:

H.W. solutions should be typed (MS-Word). Hand-written submittals are accepted when using 8.5"x11" **light-green 'engineering' paper**. No spiral notebook fringes. Use only single side of paper and staple pages together in upper-left-hand corner. Note the name and course number on **each** page. Write **legibly** and show all procedures & the methodology used in solving the problems. **Numerate** all the problems and present them sequentially. Indicate the beginning and the end of each problem. Limit of **2-3** problems **maximum** per page. All problems assigned from the same chapter are graded equally. Homework is collected at the **start** of the session due. ***Late submission is not allowed!***
Students who are not doing the H.W. assignment may be asked to leave the class & miss the lecture. H.W. must be taken very seriously!!!.

Submissions that do not conform to the above format will not be accepted.

Academic Dishonesty:

Academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form at California State University, Northridge. All students involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension and/or expulsion from the University.

"Cheating or plagiarism in connection with an academic program at a CSU campus is listed in Section 41301, Title 5, California Code of Regulations as an offense for which a student may be expelled, suspended or given a less severe disciplinary sanction.

Academic dishonesty is an especially serious offense and diminishes the quality of scholarship and defrauds those who depend on the integrity of the University's programs." Please consult university policy regarding plagiarism and the consequences.

https://catalog.csun.edu/policies/academic-dishonesty/

Any student caught cheating or plagiarizing in this class will receive a zero for the assignment and may be referred to the dean's office for additional consequences. Academic dishonesty includes, but is not limited to, cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person. The instructor reserves the right to submit your papers to turnitin.com for identifying papers containing unoriginal material.

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**** IMPORTANT NOTE: Plagiarism will NOT be tolerated whatsoever! ****

For Your Information: Grade Evaluation Criterion

*** 'A' grade range (A to A-) is reserved for work that is exceptional. This means that it (1) is professional and reflects the writer's/s' careful consideration of audience and purpose; (2) shows perfect to near-perfect understanding of the necessary concepts and analytical tasks; (3) where appropriate, it shows the capacity to think creatively or to see implications beyond the immediate scope of the question; (4) contains all necessary information (invention); (5) is arranged in a logical manner (6), is memorable; (7) delivery is visually appealing; and (8) is free of mechanical errors and is formatted as specified. Work must be flawless to attain an A/A-. Work with minor flaws that is nonetheless excellent in other ways will earn an A-.**

*** A grade in the B range means that the work is acceptable at the graduate level (B- range) to very good (B/B+). This work satisfies all (B+) or most (B/B-) of the requirements of the question & research tasks, shows the capability to think beyond the task by relating it to other areas of knowledge in or outside of the course; is neatly presented and shows above-average use of academic English. If the work is decently written, is formatted basically correctly, and covers most of the required content, but has several minor flaws or one major flaw, the grade is B-.**

*** A grade in the C range means that the work, while covering much of the required ground, does not show graduate-level analytic and expressive ability. That is, major and minor items may be missing or incorrect; and while the language may communicate most points adequately, it does not qualify as above-average academic work.**

*** A grade in the D range shows that the work does not, overall, achieve an acceptable level of coverage of the requirements AND/OR the language is insufficient to make the writer's points understandable to the reader. The content may be either incorrect to an unacceptable degree, or very incomplete.**

*** A grade of F indicates that so little of the required content is covered that grading the paper is an exercise in futility. It may mean that very major points have clearly not been grasped or have been misunderstood by the student. An F may also indicate that the ideas are expressed in such a way that they are not at all understandable to the reader. A grade of F is also awarded when assigned work is not handed in, or not handed in by the set deadline.**