

## Facilities Planning and Work Design

EIN 4360C Section 11H1

**Class Periods:** Monday and Wednesday, Period 10-11, 5:10PM to 7:05PM

**Location:** CSE E119

**Academic Term:** Spring 2018

### **Instructor:**

**Name:** Dr. Nazanin Naderi

**Email Address:** [nazanin.naderi@ufl.edu](mailto:nazanin.naderi@ufl.edu)

**Office Hours:** Wednesday 11:00AM to 1:00PM

**Office Location:** Weil Hall, Room 450A

**TA:** Xiaojie Wang

**Email Address:** [xwang828@ufl.edu](mailto:xwang828@ufl.edu)

**Office Hours:** Tuesday and Thursday from 1:00pm to 2:30pm

**Office Location:** Weil Hall, Room 406

### **Course Description**

This course introduces fundamental concepts in several main areas of industrial engineering such as facility planning, material handling systems, work analysis and design. Topics such as analysis and design of work space and flow, facility location and layout, material handling systems, motion and time studies and work sampling are covered. The course is worth 4 credits.

### **Course Pre-Requisites / Co-Requisites**

Prerequisites or Co-requisites are as follows: Prereq: EML 2023 (Computer Aided Graphics and Design), ENC3246 (Professional Communications), all with Minimum grades of C; Coreq: EIN4354 (Engineering Economy).

### **Course Objectives**

To gain an understanding of basics and principle methodologies relevant to facilities planning, materials handling, and work design. To obtain first-hand experience by identifying a project in an industrial or other business setting and by formulating, analyzing and solving the relevant professional problem. To learn working in teams and to gain the ability to make effective presentations.

### **Professional Component (ABET):**

This course contributes to ensuring that the following PEOs of our BSISE program are met:

- Will be successful professionals in industrial and systems engineering or other disciplines.
- Can acquire advanced knowledge through continuing education or advanced degree programs.
- Can become active leaders in their profession and/or community.

### **Relation to Program Outcomes (ABET):**

Outcome	Coverage*
a. Apply knowledge	High
b1. Conduct experiments	
b2. Design and conduct experiments	
c. Design	Medium
d. Function on teams	High
e. Solve problems	High
f. Professional and ethical responsibility	
g. Communicate	Low
h1. Economic impact	Medium

h2. Understanding of the impact of engineering solutions	Medium
i. Lifelong learning	
j. Contemporary issues	
k. Techniques, skills, and tools for degree program	Medium

**Required Textbooks**

- Facilities Planning, by James A. Tompkins, et al. 4th edition, John Wiley & Sons, 2010. ISBN: 9780470444047.

**Top Hat**

We will be using the Top Hat ([www.tophat.com](http://www.tophat.com)) classroom response system in class. You will be able to submit answers to in-class questions using Apple or Android smartphones and tablets, laptops, or through text message.

You can visit the Top Hat Overview (<https://success.tophat.com/s/article/Student-Top-Hat-Overview-and-Getting-Started-Guide>) within the Top Hat Success Center which outlines how you will register for a Top Hat account, as well as providing a brief overview to get you up and running on the system. An email invitation will be sent to you by email, but if don't receive this email, you can register by simply visiting our course website:

Unique Course URL. Note: our Course Join Code is **294246**. Top Hat will require a paid subscription, and a full breakdown of all subscription options available can be found here: [www.tophat.com/pricing](http://www.tophat.com/pricing). Should you require assistance with Top Hat at any time, due to the fact that they require specific user information to troubleshoot these issues, please contact their Support Team directly by way of email ([support@tophat.com](mailto:support@tophat.com)), the in app support button, or by calling 1-888-663-5491.

**E-mail Communications**

You are required to use your UF email address for the purposes of this class. The instructor will not be responsible for: 1) Emails from that do not reach you because you do not check or use your UF address; or 2) Emails that I do not receive because they are filtered into junk mail because they do not come from your UF address; or 3) Emails that you do not receive to your UF account because your mailbox is full.

**Attendance Policy and Class Expectations**

Attendance is not required; however, it is strongly recommended. It will be to your benefit to attend all lectures. Students will be responsible for all material covered in class.

Lectures are there to facilitate efficient learning, not chatting with friends, surfing the net, reading the Alligator, or sleeping. You should be focused on the course material and the in-class exercises assigned, not on activities that do not involve course work. Those who behave inappropriately will be asked to leave. If you cannot follow the lecture anymore, you can leave the class quietly; I will not be offended. Please, remember to turn off your cell phone as soon as you enter the classroom.

**Exam and Make-Up Policy**

To assess student learning, students will be given three Exams. Examinations are cumulative and given in a varied format. The exams are scheduled in advance, please plan accordingly. Make-up tests will be given for unanticipated absences ONLY (e.g., illness with a doctor's report, death in family, but **NOT** for Employment interviews, employer events, weddings, vacations, etc). Excused absences must be consistent with university policies in the undergraduate catalog (<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>) and require appropriate documentation. If you missed an exam due to a health problem, you will need to provide documentation that indicates the date of the visit. A note indicating that you were seen at the health center the day of the exam is not sufficient documentation of a medically excused absence from an exam. The note must say that you were medically unable to take the exam.

In case of an exam conflict, you will need to present evidence of the conflict to the instructor.

### ***Regrading Policy,***

Requests for regrading of exams will be considered only with a written explanation and only within a one-week period from the time graded work is returned in class. Specifically, you need to prepare a typed up or legibly written memo explaining why you believe your work needs to be regraded, attach make it the cover sheet of the exam booklet, and return it to the instructor or the TA. Grades will be posted on the course page on Canvas. Throughout the semester, you have to ensure that your grades are entered correctly. Corrections will be considered only within a one-week period after the grades have been posted on the web.

### ***Evaluation of Grades***

<b>Assignment</b>	<b>Total Points</b>	<b>Percentage of Final Grade</b>
Participation Questions	100 each	10%
Exams (3)	100 each	70%
Group project	100	20%

### ***Grading Policy***

Term exam dates will be announced well in advance. Missing an exam without substantial PRIOR notification will result in a zero grade for that exam. Final Grade will be based on classroom behavior, exams, project, and homework assignments and it will be rounded off to the nearest integer, and assigned on the standard scale as follows:

<b>Percent</b>	<b>Grade</b>
93 - 100	A
90 - 92	A-
87 - 89	B+
83 - 86	B
80 - 82	B-
77 - 79	C+
73 - 76	C
70 - 72	C-
67 - 69	D+
63 - 66	D
60 - 62	D-
0 - 59	E

### ***Administrative Issues***

- Class will begin promptly. Please let the instructor know in advance if you have a planned absence from recitation.
- While in class, please turn off (or silence) your cell phone and turn off all music listening devices.
- All exams are open book. Use of unauthorized aids on exams will result in a grade of zero; additional penalties may follow.
- I reserve the right to amend this syllabus as needed.

### ***Students Requiring Accommodations***

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, <https://www.dso.ufl.edu/drc>) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

### ***Course Evaluation***

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu/evals>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

### ***University Honesty Policy***

All students admitted to the University of Florida have signed a statement of academic honesty committing themselves to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action. This statement is a reminder to uphold your obligation as a University of Florida student and to be honest in all work submitted and exams taken in this course and all others. If you conduct any dishonest act during an exam (e.g., cheating or using any extra material that you are not allowed to use during an exam), you will get a credit of 0 on that particular exam and your final grade for the class will be reduced by a full letter grade. If you have access to any old exam/homework/quiz material that the instructor has not made explicitly available to the entire class, you will get a credit of 0 on the particular exam for which you have not disclosed the material you have to the instructor and your final grade for the class will be reduced by a full letter grade. Your conduct will also be reported to the Dean of Students, as dictated by the rules of the University, will also be taken.

### ***Software Use***

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

**Tentative Lecture Schedule**

Week	Date	Topic	Activity
1	1/08	Syllabus	
	1/10	Lecture 1: Introduction to Facilities and Work Design	
2	1/15		<b>Martin Luther King Jr. Day</b>
	1/17	Lecture 2: Product, Process and Schedule Design	
3	1/22	Lecture 3: Flow and Activity Relationships	
	1/24	Lecture 4: Flow and Activity Relationships	<b>Project Team Members list due</b>
4	1/29	Lecture 4: Personnel Requirements	
	1/31	Lecture 5: Material Handling	
5	2/5	<i>Exam 1</i>	
	2/7	Lecture 6: Layout Planning Models and Design algorithms	
6	2/12	Lecture 7: Warehouse Operations	
	2/14	Lecture 8: Manufacturing Systems, Project Discussion	
7	2/19	Project Week, No Class	
	2/21	Project Week, No Class	
8	2/26	Lecture 9: Facilities Systems& Project Management	<b>Project Proposal due</b>
	2/28	<i>Exam 2</i>	
9	3/05		<b>Spring Break</b>
	10/07		<b>Spring Break</b>
10	3/12	Lecture10: Evaluating and Selecting the Facilities Plan	
	3/14	Lecture 11: Preparing, Presenting, Implementing, and Maintaining the Facilities Plan	
11	3/19	Project Progress Presentations In class	<b>Progress Presentation due</b>
	3/21	Lecture 12: Work Design 1	
12	3/26	Lecture 13: Work Design 2	
	3/28	Lecture 14: Work Design 3	
13	4/02	Lecture 15: Work Design 4	
	4/04	Lecture 16: Work Design 5	
14	4/09	Lecture 17: Work Design 6	
	4/11	<i>Final Exam</i>	
15	4/16	Project Final Presentations Day 1 In class	
	4/18	Project Final Presentations Day 2 In class	
16	4/23	Project Final Presentations Day 3 In class	
	4/25	Project Final Presentations Day 4	

## **Note**

I may revise this schedule to take advantage of guest speakers or tours if the opportunity should arise. We will stay as close to this schedule as possible; however, coverage will depend on overall class progress and discussion. Students must refer to the Canvas for up-to-date syllabus information and for the assignments pertaining to each class section. Students are responsible for any changes/additions to this syllabus announced in class.

## **Student Privacy**

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: <http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html>

## **Campus Resources:**

### Health and Wellness

#### **U Matter, We Care:**

Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

**Counseling and Wellness Center:** <http://www.counseling.ufl.edu/cwc>, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

#### **Sexual Assault Recovery Services (SARS)**

Student Health Care Center, 392-1161.

**University Police Department** at 392-1111 (or 9-1-1 for emergencies), or <http://www.police.ufl.edu/>.

### Academic Resources

**E-learning technical support**, 352-392-4357 (select option 2) or e-mail to [Learning-support@ufl.edu](mailto:Learning-support@ufl.edu).

<https://lss.at.ufl.edu/help.shtml>.

**Career Resource Center**, Reitz Union, 392-1601. Career assistance and counseling. <https://www.crc.ufl.edu/>.

**Library Support**, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.

**Teaching Center**, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring.

<https://teachingcenter.ufl.edu/>.

**Writing Studio, 302 Tigert Hall**, 846-1138. Help brainstorming, formatting, and writing papers.

<https://writing.ufl.edu/writing-studio/>.

**Student Complaints Campus:** [https://www.dso.ufl.edu/documents/UF\\_Complaints\\_policy.pdf](https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf).

**On-Line Students Complaints:** <http://www.distance.ufl.edu/student-complaint-process>.