**Instructor:** Durward Sobek  
318 Roberts Hall, 994-7140, dsobek@montana.edu

**Class:** MWF 8:00-8:50 a.m., 412 Roberts Hall

**Laboratory:** 415 Roberts Hall

**Course Web:** Brightspace LE: [https://ecat1.montana.edu/](https://ecat1.montana.edu/)  
http://www.montana.edu/dsobek/teaching/ime442

**Office Hours:** Open door policy or by appointment:  
[https://www.montana.edu/scheduler/login/student/?fac=6315](https://www.montana.edu/scheduler/login/student/?fac=6315)

**Required Text:**  

**Catalog Description:**  
3 credits -- Senior capstone course. The first course in the senior capstone sequence. Principles and techniques for planning and designing production facilities and material handling systems. Product and process analysis, requirements, layout and support facilities. Computer-aided analysis and design.

**Pre- and Co-Requisites:**  
PREREQUISITES: IMSE seniors graduating in Spring or Fall 2019,  
EIND 313, EMEC 103, ETME 215.  
COREQUISITE: EIND 300.

**Objectives:**  
This course addresses fundamental concepts and tools in three areas: facility layout, material handling systems, and facility location. By the end of the course, every student should be able to:

1. articulate systematic procedures for facilities planning and the corresponding design steps;
2. analyze complex process flows using engineering tools and approaches;
3. generate alternative solutions to different types of facility layout problems, and evaluate those alternatives;
4. apply the principle of unit load in facility layout design;
5. identify appropriate material handling systems for a given application through appropriate evaluation;
6. frame facility location decisions in order to apply decision-making techniques, including application of several basic facility location models; and
7. use modern computer tools related to the above topics.

Expectations:
1. Be respectful and considerate of others — Be on time. Be all here. Respect your classmates.
2. Be an active learner — Work the daily assignments. Participate in class. Listen actively. Ask questions.
3. Be honest — Do your own work. Give credit where it is due. Tell the truth.
4. Hand assignments and reports in on time.
5. Have fun!

Assignments and Reading:
- I expect each student to complete the assigned reading and homework before coming to class. Class time will be used to clarify misunderstandings, discuss and review homework problems, and supplement the textbook with outside material.
- Homework is due at the start of class unless otherwise indicated, and will be graded for completeness using a simple binary scale. Homework will be reflected in a participation grade that will be included in the next quiz score.
- Completing the homework and reading on a timely basis is essential to meeting the learning objectives of the course. The homework serves to help students acquire the relevant concepts and hone problem-solving skills that they will then demonstrate on quizzes.

Quizzes and Examinations:
- In lieu of a midterm exam, quizzes will be administered in class every 2-3 weeks. Quizzes will cover a specific set of learning objectives, and are typically challenging to complete in the 25 minutes allotted.
- The final exam will be held 4:00-5:50 p.m., Thursday, December 13, in 412 Roberts Hall. Quiz 6 will be held during the first 25 minutes of the exam period, followed by an 80-minute comprehensive exam over the remaining course learning objectives. Students who attain a quiz average of 75% or better on the first five quizzes can opt out of the comprehensive exam and substitute their Quiz 1-5 average percentage for their final exam score. For students who take the final, their percentage score on it will replace their lowest quiz score (quizzes 1-5) if doing so will benefit the student’s grade.
CICMHE Design Contest:
A major group project to draft a submission to the annual College Industry Council on Material Handling Education (CICMHE) student design competition is required (http://www.mhi.org/cicmhe/competition). Details will be forthcoming.

Grading:
- Grades will be determined by each student’s percentage score, according to the following weights:
  - 60% quizzes
  - 20% final exam
  - 20% CICMHE design competition

- Each student will receive a letter grade based on his/her cumulative percentage score according to the scale below.
- If the average class grade is substantially below B-, grades will be adjusted upwards such that the class average is roughly 75% and letter grade assignments made accordingly. Otherwise, no adjustments will be made.

<table>
<thead>
<tr>
<th>GRADE</th>
<th>QUALITY</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A’s</td>
<td>Excellent</td>
<td>A+: 94+</td>
</tr>
<tr>
<td>B’s</td>
<td>Good</td>
<td>B+: 84</td>
</tr>
<tr>
<td>C’s</td>
<td>Average</td>
<td>C+: 74</td>
</tr>
<tr>
<td>D’s, F</td>
<td>Below Expectations</td>
<td>D+: 64</td>
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Laboratory:
- The laboratory associated with the course is the Billie O. Ragsdale Production Systems Design Laboratory located in Roberts 415. You will be issued a key to this lab and will be able to use it for the semester. Students continuing on to EIND 499 may keep their key for use next semester; all other students must return their key by December 13.
- Please abide by the posted laboratory policies.
- Some class periods may meet in Roberts 415 rather than Roberts 412 to introduce software tools useful for facilities planning.

Course Listserv:
An email listserv has been automatically created for this class. Since I will periodically post messages to the listserv (such as clarifications on assignments), all students should check their MSU gmail accounts regularly. If you’d like to add another email address to the listserv (perhaps one that you check more regularly), add yourself by following these instructions:
1. Send a message to sympa@sympa.montana.edu from the address you want to subscribe to the list.

2. Enter subscribe EIND442001-fa18 firstname lastname into the subject field of the message (replacing firstname and lastname with your real name).

3. Leave the message body blank.

You will receive a reply message confirming your subscription to the list.

Policies:

- I expect each student to make full effort to attend every class. If you miss class, you are still responsible for completing assignments and knowing the material covered in class that day. If you know you will miss class, try to see me beforehand.

- All assignments are due at the start of class on the assigned due date unless otherwise specified. Quizzes will be administered at the start of class, with no additional time granted to late-comers.

- There will be no make-up quizzes unless you notify me beforehand. Exceptions may be granted for extenuating circumstances.

- The final exam will be held at the time set by the registrar’s office, and you must take it during the scheduled time. By University policy, the only exception allowed is if 3 or more exams are scheduled for the same day. In this case, you may petition to take one of the exams early.

- If you have a documented disability for which you are or may be requesting special accommodation, please contact Disabled Student Services as soon as possible, and discuss your specific situation with the instructor.

- To protect the privacy of students’ personal academic information, records related to this course will not be shared with anyone, including parents, without a signed, written release. Before giving such authorization, you should understand the purpose of the release, to whom, and for how long to authorize release.

- Graded homework will be returned in class, with the score written on the front of the assignment. Students will collect their homework from a stack of homework passed around the classroom. Quizzes will be returned individually, then collected again before the end of class and held in the instructor’s office until course grades are submitted. Any student who would like stricter privacy for their homework or quiz grades can arrange an alternative method for collecting homework or seeing quizzes.

- Chronic tardiness is unprofessional and unacceptable, and may result in you being asked to leave class. The same holds for disruptive or disrespectful behavior.
• Collaboration on homework is permitted in recognition that study groups can be beneficial to student learning. However, each submission should represent your own work, your unique approach to the question or problem. Copying or other duplication of another’s work is forbidden.

• Lying, cheating, plagiarism, or any other form of dishonesty will not be tolerated. Evidence of academic misconduct will be reported to the Dean of Students; and students who engage in such behavior will be subject to University sanctions, even for a first offense. Students should be familiar with MSU Student Conduct Guidelines, particularly sections 300, 400, and 600 (see: http://www.montana.edu/policy/student_conduct/ ).