Course title and number  ISEN 330 Human Systems Interaction
Term (e.g., Fall 200X)  Fall 2016
Meeting times and location  TBD

Course Description and Prerequisites
Principles of human factors and ergonomics; emphasis on design to support human capabilities, limitations, and interaction tendencies in sociotechnical work systems; topics include human information processing, physiological and biomechanical functioning, and implications for design of the workplace and jobs; case studies in manufacturing, medicine, aerospace, ground transportation, and computer interaction.

Prerequisites: MMET 181, Junior classification

Learning Outcomes
Students will be able to

- demonstrate an understanding of the unique factors effecting human performance in sociotechnical systems,
- apply human factors theory to the design or selection of system elements to support human performance and safety,
- apply mathematical theory to calculate the severity of hazards due to exposure to visual, auditory, vibratory, air quality, and other environmental stimuli and identify redesign solutions for mitigating the hazards,
- apply mathematical theory to determine ideal display, control, and physical layout characteristics for supporting an operator’s cognitive and physical performance,
- demonstrate communication skills in a semester-long writing assignment, and
- demonstrate applied knowledge of course concepts in identifying human-systems interaction problems with an existing technology, and in proposing redesign solutions.

Instructor Information
Name  TBD
Telephone number  TBD
Email address  TBD@tamu.edu
Office hours: TBD
Office location: TBD

Textbook and/or Resource Material


Instructor-prepared course packet

Grading Policies

Grade Determination: 22% Homework/quizzes, 20% Midterm exam, 25% Final exam, 33% Written Report

Grades will be calculated on the basis of total points earned. The points can be curved based on class average and may be lower than the following standard (out of a total of 100 percentage points). Since this is a writing intensive course, you must pass writing to pass the course; thus, if your written report grade is less than 60%, your course grade will be an F even if all other grades are 100%.

A 90-100%
B 80-89%
C 70-79%
D 60-69%
F 59% and lower

Attendance and Make-up Policies

Homework and Quizzes:

There will be approximately one homework assignment released per lecture topic, designed to give you practice in applying principles and ideas learned in the course. Some but not all of the homeworks will be graded (the instructor will specify when they are graded). Ungraded homeworks will be provided to you so you can work through the problems in preparation for graded quizzes and exams.

Homework assignments and solutions will be posted on eCampus and announced in lecture and/or via email. Due dates for each assignment will be given when they are issued, but will generally be within 1 week. Completed assignments can be submitted in class, or electronically via eCampus (in Word or pdf format). Quizzes will be conducted during lecture, either via eCampus or on paper. The total homework/quiz grade will be based on total points, not on the average of percentage grades for each entry.

Generally, assignments that are submitted after the due date/time will not receive any credit. You are expected to attend all class lectures except for university excused absences. With an excused absence, it is still the student's responsibility to find out the homework assignment and be ready for a quiz. The university rule regarding excused absences can be found at http://student-rules.tamu.edu/rule07.
Exams:

There will be two exams, a midterm worth 20% of the overall course grade, and a final exam worth 25%. Format for each exam is TBD depending on available resources will likely use some combination of eCampus and written format. The exams will emphasize material discussed in lecture and practiced in the homework; material exclusively in the text will not be tested but may aid in providing background information. Each exam can include quantitative problems, short answer questions, and/or essays. Grades will be posted on the course eCampus website and students can review their graded exams during office hours.

Make-up for the exams will be offered only in case of a university excused absence. The university rule regarding excused absences can be found at http://student-rules.tamu.edu/rule07.

Re-grading Policy:

Students have 1 week after grades are released for a homework, quiz, or exam to submit a re-grade request in writing. This request must not exceed 1 page (11 point font, single spacing), and must clearly indicate the relevant problem(s) and justification for why you think re-grading is warranted. Note that a requested re-grade may result in further point deductions if new errors are discovered.

Course Topics, Calendar of Activities, Major Assignment Dates

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Required Reading</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction to systems engineering, sociotechnical systems, the human as a system component, and the fields of human factors and ergonomics</td>
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<tr>
<td>2</td>
<td>Visual perception, designing to support visual information processing, and vision safety</td>
<td></td>
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<tr>
<td>3</td>
<td>Auditory perception, designing to support auditory information processing, and audition safety</td>
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<tr>
<td>4</td>
<td>Cognitive factors: attention, memory, stress, and mental workload</td>
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<tr>
<td>5</td>
<td>Human error</td>
<td></td>
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<tr>
<td>6</td>
<td>Modeling information processing and motor skills</td>
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<tr>
<td>7</td>
<td>Displays and controls</td>
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<tr>
<td>8</td>
<td>Documentation and warnings, Midterm exam (in class)</td>
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<tr>
<td>9</td>
<td>Anthropometry and work station design</td>
<td></td>
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</tbody>
</table>
Final Exam during finals week

Other Pertinent Course Information

Writing Requirement

As this course is a designated ISEN “W” (writing) course, a semester-long assignment will involve analyzing and redesigning a technology that is problematic from a sociotechnical systems perspective. Human factors and ergonomics analyses will be used to identify problems with the technology, and human-centered design methods will be applied to a proposed redesign that mitigates the identified problems. The details of written report deliverables will be discussed early in the semester. The deliverables will be graded for both technical accuracy and clarity and combined will be worth 33% of the overall course grade.

Writing Portion

As a “W” course, ISEN 330 will include a semester-long writing component. This is designed to meld industrial engineering topics with writing through practical application of engineering concepts in homework assignments and through the synthesis of that technical work into writing assignments. Students will write introductions, executive summaries, and final reports. Students will also write individual assignments that will consist of memos, emails, and reports related to their coursework. Because this is a university approved W course, students must pass both the writing portion and the technical portion to pass the course. Failing either will result in a failing grade in the course.

Some writing assignments will be evaluated for both technical correctness and the writing quality. In those cases, students will submit their work to both the writing instructor (always via eCampus) and the TAs as they specify (usually printed copies). Writing instruction will focus primarily on improving the effectiveness of each student’s communication with regard to audience, purpose, and subject. Grammar, spelling, and punctuation will be addressed, but they will not be the primary focus of instruction unless they impact communication or credibility.

Writing assignments will be evaluated and graded separately. It is entirely possible for the writing grade to differ from the technical grade; the two are not related and differences between them are expected. As the course progresses and students begin to work in groups, they will still have individual writing requirements.

Writing instruction will take place during the lecture or lab period and will start immediately when the class period begins. Be on time. You are responsible for any instruction you miss because of tardiness and if you miss a graded event, you will not be allowed to make it up--without a university excused absence. If you arrive late and an in-class exercise has already started, the writing instructor will decide if you can participate or not.
The work associated with the W component consists of at least two case studies, supporting writing assignments, writing-based homework assignments, and a few quizzes or in-class exercises. Writing-specific assignments will be distributed at the start of each lab period and may be separate from other lab assignments. Writing assignments are due at the start of the next lecture/lab period unless a different due date is announced. Assignments submitted after the due date will receive a zero unless the student has a university excused absence.

<table>
<thead>
<tr>
<th>Deliverable</th>
<th>% of Writing Grade</th>
<th>Approximate Due Date</th>
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</thead>
<tbody>
<tr>
<td>Draft 1</td>
<td>15%</td>
<td>Week 3</td>
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<tr>
<td>Draft 2</td>
<td>15%</td>
<td>Week 6</td>
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<tr>
<td>Revision or Draft 3</td>
<td>15%</td>
<td>Week 9</td>
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<tr>
<td>Final</td>
<td>40%</td>
<td>Week 13</td>
</tr>
<tr>
<td>In class writing/ quizzes</td>
<td>15%</td>
<td></td>
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</tbody>
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**Americans with Disabilities Act (ADA)**

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, in Cain Hall, Room B118, or call 845-1637. For additional information visit [http://disability.tamu.edu](http://disability.tamu.edu).

**Academic Integrity**

For additional information please visit: [http://aggiehonor.tamu.edu](http://aggiehonor.tamu.edu)

"An Aggie does not lie, cheat, or steal, or tolerate those who do."

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning and to follow the philosophy and rules of the Honor System. Ignorance of the rules does not exclude any member of the Texas A&M University community from the requirements or the processes of the Honor System. For additional information please visit: [http://student-rules.tamu.edu/](http://student-rules.tamu.edu/); [http://student-rules.tamu.edu/aggiecode](http://student-rules.tamu.edu/aggiecode); and [http://student-rules.tamu.edu/rule20](http://student-rules.tamu.edu/rule20). The complete information of university regulations regarding the handling of academic misconducts (including the appeal process) can be found at [http://aggiehonor.tamu.edu/](http://aggiehonor.tamu.edu/).

I, <insert instructor name>, as the rest of the Industrial & Systems Engineering Faculty, uphold the Aggie Honor Code as an axiom of our academic excellence. We consider its sincere observance to be essential for membership in our department and Texas A&M. We extend you the trust conferred to those who faithfully adhere to our honor code. Abuse of this trust is intolerable, thus I will report and assign an extreme penalty to those who do not stand with us in preserving the integrity symbolized by the Aggie Honor Code, "An Aggie does not lie, cheat, or steal or tolerate those who do."

In this course the penalty for any violation of the Aggie Honor Code, as minimal as it may be, is F*. 