Class Hours & Location: M/T/W/TR 9:00 am -12:00 pm  Class Room: HS224  
Faculty: Dr. Su-Jeong H. Shin   Office: HS 101B  
Office Hours: M/W 12:00-1:00 pm  (or by appointment)  
Phone: 742-3050 ext. 254   E-mail: su.hwang@ttu.edu

Required Textbook:

References:

Catalogue Description:
This course is a required class for environmental design majors and minors. This course focuses on human factors/ergonomics in environmental design. This course provides students with the human factors/ergonomics information necessary for analyzing and designing interior spaces, both residential and non-residential.

Course Purpose:
This course introduces students to concepts of human factors, the anthropometric aspects of ergonomics that applies the related information to the design of interior spaces. Course materials relate to applications that follow the principles of human factors and ergonomic method. The purpose of the course is to help students to learn to apply the principles of human factors/ergonomics to designing interior spaces. Students will learn about the principles of human factors/ergonomics, and anthropometrics relationship to environmental design, and metrological analysis through assignments and a final project.

Course Objectives:
1. To understand the principles of human factors and the relationship to environmental design.
2. To understand issues of ergonomic design in the built environment
3. To learn metrological analysis of the anthropometrics relationship to ergonomic environmental design.
**Expected Learning Outcomes:**
Upon completion of this course, students should be able to:
1. Explain the relevance of human factors and anthropometrics to environmental design.
2. Explain the importance of ergonomic design in the built environment.
3. Analyze anthropometric dimensions for designing interior spaces and products for children, men, women, elderly and physically challenged individuals.
4. Demonstrate design analysis that follows the principles of human factors/ergonomics.

**Methods for Assessing the Expected Learning Outcomes:**
The expected learning outcomes for the course will be assessed through: Assignments, a final project, Class discussions, presentations, and feedback.

**Course Policies:**
Please read the assignments before coming to class. The reading assignment, lecture discussions and projects are intended to complement each other. This course, as with most design courses, is rigorous, and if you are current with your reading you will get more out of your class time. Ask questions. Chances are if you are confused, so are others. At time you all will be confused, so maintain your sense of humor. The syllabus presents the anticipated tentative schedule.
Although I expect to keep to the dates in general, some flexibility is allowed. The raising of questions during class time is welcomed and encouraged. If I don’t have the answer to your question, I will try to obtain a response within a reasonable period of time. I hope that each of you will share your experiences and knowledge with the class.

**American Disabilities Act:**
Any student who, because of a disability, may require special arrangements in order to meet the course requirements should contact the instructor as soon as possible to make any necessary arrangements. Students should present appropriate verification from Student Disability Services during the instructor’s office hours. Please note instructors are not allowed to provide classroom accommodations to a student until appropriate verification from Student Disability Services has been provided. For additional information, you may contact the Student Disability Services office at 335 West Hall or 806-742-2405.

**Classroom Civility:**
“Students are expected to assist in maintaining a classroom environment which is conducive to learning. In order to assure that all students have the opportunity to gain from time spent in class, unless otherwise approved by the instructor; students are prohibited from engaging in any other form of distraction. Inappropriate behavior in the classroom shall result minimally, in a request to leave the class.”

“It is the aim of the faculty of Texas Tech University to foster a spirit of complete honesty and a high standard of integrity. The attempt of students to present as their own any work that they have not honestly performed is regarded by the faculty and administration as a serious offense and renders the offenders liable to serious consequences, possibly suspension.”
Cheating: Dishonesty on examinations and quizzes or on written assignments, illegal possession of examinations, the use of unauthorized notes during an examination or quiz, obtaining information during an examination from the examination paper or otherwise from another student, assisting others to cheat, alteration of grade records, illegal entry to or unauthorized presence in an office are instances of cheating.

Plagiarism: Offering the work of another as one’s own, without proper acknowledgment, is plagiarism; therefore any student who fails to give credit for quotations or an essentially identical expression of material taken from books, encyclopedias, magazines, and other reference works, or from the themes, reports, or other writings of a fellow student, is guilty of plagiarism.

Attendance:
Attendance and participation in this course is mandatory. An excused absence, as defined by the University, is a verified illness, family emergency, religious observance, or University sponsored event. A doctor’s note or letter from the appropriate person will be considered verification for an excused absence. An excused absence must be reported to the professor prior to the class meeting by note, telephone, or email. Students are allowed 3 excused absences from class. After 3 excused absences, each additional absence will result in the loss of 5% of the final total grade for the course.

* An incomplete will only be given for documented illness or death in the family.
* Everything is due on the assigned date. Absence is not an excuse for not turning in a project or assignment on time.
* Absence due to religious observance: The Texas Tech University Catalog stats that student who is absent from classes for the observance of a religious holy day will be allowed to take an examination or complete an assignment scheduled for that say within a reasonable time after the absence. (p.49) (Note: prior notification to the instructor is no longer required.) Remember: This still counts as an absence! It just means you are allowed to make up your work with the prearranged amount of time (by the next class period).
* Absence due to officially approved trips: The Texas Tech University Catalog states that the person responsible for a student missing class due to a trip should notify the instructors of the departure and return schedule in advance of the trip. The student may not be penalized and is responsible for the material missed. (p.48). Remember: This still counts as an absence! It just means you are allowed to make up your work with the prearranged amount of time (by the next class period).

Late Assignments and Final Project:
Assignments are due at the beginning of class on the dates given in the syllabus unless otherwise specified by professor. Any late assignments or late final projects will result in a 5% point off the graded assignment. Only students with an excused absence (doctor’s note required) will not be penalized for a late assignment policy. However, the assignment must be submitted by the next class period following the absence, or the late policy will apply. Make-up projects will only be given to students with a verified, excused absence. The submission must be made up within one week of the absence.
Grading:
Students will be evaluated on their ability to meet the course objectives based on their fulfillment of the class projects and assignments.

90% or higher = A  
(100–97% = A+,  96.9–93% = A,  92.9–90% = A-)

80%-89% = B  
(89.9–87% = B+,  86.9–83% = B,  82.9–80% = B-)

70%-79% = C  
(79.9–77% = C+,  76.9–73% = C,  72.9–70% = C-)

60%-69% = D  
(69.9–67% = D+,  66.9–63% = D,  62.9–60% = D-)

Less than 60% = F

Assignments (600 points) = 60%
  Assignment #1 (200 points)
  Assignment #2 (200 points)
  Assignment #3 (200 points)

Final Project (300 points) = 30%

In-Class Participation/Discussions = 10%

Total points (1000 points) = 100%

In-Class Participation/Discussions
Weekly discussions will be based on assigned readings. Students will be responsible for participating in discussions, preparing, presentations and papers which integrate material from readings covering each part of the course.

Assignments
Throughout the course of the semester, students will be required to write three brief papers related to human factors ergonomics in environmental design. These assignments will be from course readings and lectures as well as assist students in applying their knowledge of human factors to environmental design. The three parts of the course deal primarily with 1) Concepts: relation of human factors and interior space design 2) Relation of anthropometric theory and data application (interior space design)/environmental design reference standards, and 3) Metrological analysis of human dimensions for interior design (substantive theory). The emphasis of the discussions and the papers will be on the integrated interactive character of these elements.

In each assignment, a summary of findings will be written in a report format and will be presented w/ Power point. The text should be Times New Roman, 5-6 pages in length, 12 fonts, and a single space. References and text citations should follow APA style, and must incorporate at least 1–2 reference from professional journals (e.g. Applied ergonomics, ergonomics, etc.). Presentation should be 20 minutes in length.

* More information will be discussed at a later date.
Final Project
Students will be required to submit a final paper. Each student will choose a subject that is related to ergonomics in environmental design. Find issues and problems. Demonstrate examples (or case studies) of interior space design or the built environment design that is related to human factors and anthropometrics, understanding the principles of human factors for ergonomic design. Completed project will be required the following:

1. Written report should include:
   - Title and student name
   - Introduction/background
     - Describe human factors and ergonomics in environmental design. State problems and issues.
   - Objectives (clear 1 sentence)
   - Method
     - Describe design procedure and methodological analysis of anthropometric information that is used for the project.
   - Findings
     - Findings can be demonstrated with drawings of the space design, cases of other studies, or statistic analysis results.
   - Conclusions/discussions
   - Limitations
   - References
     The text should be Times New Roman, 10~12 pages in length, 12 fonts, and a single space. References and text citations should follow APA style, and must incorporate at least 3 references from professional journals.
     * Example pictures/drawings of the space design that is related to human factors/ergonomics can be included (Option).

2. Presentation: Students will present this to the class on the day of the final.
   * More information will be discussed at a later date.

Criteria for Final project Grading:
1. Written Report:
   a. Knowledge of the subject matters, human factors in environmental design
   b. Format (Required format, APA reference and citations, a single space, etc.)
   c. Quantity
   d. Clearly state objectives
   e. Clearly describe method
   f. Clear writing style (include introduction, objectives, method, findings, examples, conclusions, limitations)
   g. Effective approaches and findings.
   h. Demonstration of the applied knowledge of ergonomic issues in environmental design.

2. Presentation
   a. Effective communication skills (eye contacts, voice, clear introduction, clear ending)
   b. Content (well informed)
   c. Organization (clear fonts, clear examples, and easy to follow the contents).
<table>
<thead>
<tr>
<th>Date</th>
<th>Lecture Topics</th>
<th>Reading</th>
<th>Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/7</td>
<td>Course overview &amp; requirements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7/8</td>
<td>Concepts of Human factors &amp; Ergonomics/ Sanders Ch.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7/9</td>
<td>Ergonomics &amp; Anthropometrics in Environmental Design</td>
<td>Sanders Ch.13, Panero Ch.A-1, Lang Ch.12.</td>
<td></td>
</tr>
<tr>
<td>7/13</td>
<td>Ergonomic workplace design: Work space, Reach, and Clearance</td>
<td>Sanders Ch.13</td>
<td>Assignment # 1</td>
</tr>
<tr>
<td>~7/16</td>
<td>Arrangement within a Physical Space</td>
<td>Sanders Ch. 14, Panero Ch.A-2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interpersonal aspects / Privacy, territoriality and personal space</td>
<td>Sanders Ch.15, Lang Ch 14, 15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Understanding Human beings: Information input / Cognitive maps</td>
<td>Sanders Ch.3-Ch.5, Lang Ch.13</td>
<td></td>
</tr>
<tr>
<td>7/20</td>
<td>Physical work &amp; handling, range of movement and control (compatibility)</td>
<td>Sanders Ch.8-10</td>
<td>Assignment # 2</td>
</tr>
<tr>
<td>~7/23</td>
<td>Illumination</td>
<td>Sanders Ch. 16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Research issues of human factors: Average man fallacy, Diversity in Environmental design</td>
<td>Panero Ch.A-3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interior space/ basic design reference standards</td>
<td>Panero Ch. C</td>
<td></td>
</tr>
<tr>
<td>7/27</td>
<td>Human factors research methodologies (Human dimension /Metrological analysis)</td>
<td>Sanders Ch.2; Panero Ch. B1-9; Zar.</td>
<td>Assignment # 3</td>
</tr>
<tr>
<td>~7/30</td>
<td>Final project designing spaces: Anthropometric survey using 3D scan system</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Final project designing spaces: Analyze anthropometric dimensions correlates of environmental design</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8/1</td>
<td>Final project designing spaces: Applications in environmental design</td>
<td></td>
<td></td>
</tr>
<tr>
<td>~8/5</td>
<td>Final project presentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8/6</td>
<td>Final project presentation</td>
<td>Final project Due</td>
<td></td>
</tr>
</tbody>
</table>