

ISE 8990 Human Physical Capabilities

TR—9:30-10:45—106 Simrall

Instructor: Dr. Kari Babski-Reeves (Dr B) **TA:** TBA
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Office: 260I McCain

Office Hours for Dr B: Tuesday and Thursday 11:00-12:00 or by appointment

NOTE: Please note that my availability outside of scheduled office hours will be limited. Drop-ins typically cannot be accommodated. If you need to see me outside of these hours, identify a few times that you are available through e-mail and I will quickly respond as to when I am free.

Course Description: Assessment of physical capacities and limitations, ergonomic design principals for manual work design, workplace design, and work environment design.

Required Text: Chaffin, DB, Andersson, GBJ, and Martin, BJ (2006). *Occupational Biomechanics, 4th Ed.* Wiley Interscience: Hoboken, NJ.

Web Site: A course website has been developed for your use (<https://mycourses.msstate.edu>). You will find copies of the syllabus, lecture notes, and other materials posted here. You are responsible for obtaining a copy of the lecture notes prior to the class period in which they are needed. DO NOT assume that the lecture notes posted constitute all of the material covered in class. We will cover some notes not posted and we will not cover all of those made available to you!

Please **DO NOT** send me or respond to e-mails from the course site as I do not check this e-box. If you have a question for me, send your e-mails to my e-mail address above.

Honor Code: All students must adhere to the Honor Code Policies of Mississippi State University. The Honor Code will be strictly enforced in this course. All assignments shall be considered graded work, unless otherwise noted. All aspects of your coursework are covered by the honor system. Any suspected violations of the Honor Code will be promptly reported. Honesty in your academic work will develop into professional integrity. The faculty and students of Mississippi State University will not tolerate any form of academic dishonesty.

Mississippi State University has an approved Honor Code that applies to all students. The code is as follows:

"As a Mississippi State University student I will conduct myself with honor and integrity at all times. I will not lie, cheat, or steal, nor will I accept the actions of those who do."

Upon accepting admission to Mississippi State 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 Code. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the MSU community from the requirements or the processes of the Honor Code. For additional information please visit: <http://www.msstate.edu/dept/audit/PDF/1207.pdf>.

Accommodations: Please schedule an appointment with me during the first two weeks of the semester to discuss academic, religious, cultural, or documented disability accommodation needs.

Course Requirements:

Examinations: Two in-course examinations and a required, comprehensive final examination will be given. The exams are prescheduled and rarely deviate from the course schedule; therefore, students should plan accordingly. The format of the examinations will be closed book, closed notes unless otherwise stated. **NO make-up examinations will be given.** Students who miss an exam **must** provide me with a **written official excuse** within 24 hours of the scheduled exam. If

the excuse is accepted, the weight of the final exam will be raised accordingly to compensate for the missing test grade.

Homework: Scheduled in-course homework is identified in the syllabus. These assignments are to be completed by students individually. Collaboratively working on the assignments is considered a violation of the honor code and will be treated as such. Homework is to be submitted at the beginning of the class period on the due date. For distance students, homework should be submitted no later than 12 pm on the due date (e-mail submissions are acceptable).

Course Project: A course project, to be identified at the start of the semester will be required. Students will work in groups which will be determined during the 2nd week of class. For distance students, they can elect to conduct their own project, agree to work with an on-campus group, or write a summary on a topic related to the course. Distance students will need to notify the instructor by the 2nd week of classes which option they will pursue. The course project will include both a written report and oral presentation. IRB approval is not required, but strongly encouraged. Project topics will be provided to the group and are expected to be related to a current work environment. Additional details on the project will be provided throughout the semester.

Grading: An overall course grade will be assigned based on performance using the following percentages:

| <i>Course Requirement</i> | <i>Total Points Possible</i> |
|-------------------------------|------------------------------|
| Examinations (2 @ 100 pts ea) | 200 |
| Final Examination | 200 |
| Project Written Report | 100 |
| Project Oral Report | 50 |
| Project Progress Report | 50 |
| Homework (4@ 50 pts ea) | 200 |

*The homework problems will count as a laboratory report.

Letter grades will be assigned using the following scale:

| Letter Grade | Points Accumulated |
|--------------|--------------------|
| A | 720 - 800 |
| B | 640 - 719 |
| C | 560 - 639 |
| D | 480 - 559 |
| F | 479 or less |

Additional Information

1. Regular class attendance and participation will help to ensure quality performance in this class.
2. Course examinations will focus on the application of the principals and techniques discussed in the lecture. Additionally, exam questions may be based on in-class discussions.
3. I will not struggle to read illegible handwriting in grading exams, quizzes or any other assignment. You must write so that I can read what you have written, otherwise it will not be graded and considered incorrect.
4. All written assignments will be graded on the quality of the work. It is expected that each of you will provide me with well-written and defended solutions to the problems for this class. It is also expected that your performance will increase with structured feedback.
5. If you have a dispute about a grade for any assignment or examination, provide me with a written explanation of what you are disputing and why no later than **1 week** after the work was returned to you. Realize that I reserve the right to re-grade the entire work when reviewing the dispute. I do make mistakes, so please don't hesitate to bring them to my attention.
6. I will strive to make this a challenging and exciting class. I welcome your suggestions for improving the course at any time.

Tentative Class Schedule (Subject to Change)

| <i>Date</i> | <i>Topic</i> | <i>Assignments</i> |
|----------------------------|-------------------------------------|------------------------------------|
| 1/8 | Introduction | |
| 1/13 1/15 | Musculoskeletal System | Project Topic Assignment/Selection |
| 1/20 1/22 | Anthropometry | HW 1 (Due 1/29) |
| 1/27 1/29 | Physical Work Capacity | |
| 2/3 2/5 | Review for Exam 1 | |
| 2/10 2/12 | Exam 1 Bioinstrumentation | HW 2 (Due 2/19) |
| 2/17 2/19 | Biomechanical Models | |
| 2/24 2/26 | | Project Progress Report Due |
| 3/3 3/5 | Materials Handling | |
| 3/10 3/12 | Workplace Design | HW 3 (Due 3/24) |
| 3/17 3/19 | Spring Break!! | |
| 3/24 3/26 | Review for Exam 2 Exam 2 | |
| 3/31 4/2 | Vibration | HW 4 (Due 4/7) |
| 4/7 4/9 | Hot and Cold Stress | |
| 4/14 4/16 | Worker Selection and Training | |
| 4/21 4/23 | Project Oral Reports Last Day | Final Project Due |
| 4/28 4/30 | | |