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HHP 386.01: Applied Anatomy, Kinesiology and Biomechanics

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HHP 386 – APPLIED ANATOMY, KINESIOLOGY AND BIOMECHANICS

Time: Thursday 4:10 – 7:00pm  Location: McGill 215  Instructor: Dr. Steven E. Gaskill
Office: McGill 104  Office Hours: Will be posted on office door  Phone: 243-4268
Email: steven.gaskill@umontana.edu

Required Facpac: Includes all lecture slides and practicums – available at the bookstore.
WEB SITE: http://eres.lib.umt.edu,  password: HHP386 (note caps)

This class will be run as a project based learning environment. This means that you will be given problems in small groups that you will work to solve. This will require learning to work in groups, learning to define a problem, research the information that you may need to solve or evaluate the program and working in a less structured environment. You will have much less direct classroom instruction and direction than you are used to having. The professor will do much less lecturing and more consulting and advising. You and your group will need to brainstorm, think, plan and act. You may become frustrated. By dealing with your frustrations you will learn process. Of course, there will be some lecture time, about 1/3 to ½ of the available time each week. Some weeks, the professor may not lecture on the material at all, but rather will expect you to have read the notes, done additional research to be able to answer the unit objectives (listed at the beginning of each set of notes) and do the practicum.

Your practicum group must maintain a neat experiment notebook with removable pages. Experiments assigned each week are due at the beginning of the next class and will generally be returned the following week.

You are expected to read your text or other sources or any additional materials needed to help you solve or evaluate problems. Reading the suggested chapters in the book will greatly help you to perform the exercises. For each project, or after those classes where material is presented, you should use the index in your text and in additional materials to find related or necessary information. This additional reading will be necessary in order to understand all of the material and to do well on your projects. Please remember, the Mansfield Library contains many useful materials – try it out. You may also find information on the Internet (some good, some bad).

Week 1  Introduction, Structural, Articular, and Muscular Concepts; Anthropometrical Concepts;
Recommended Reading (Hamiton and Luttgens) - Chapter 1

Week 2  The Musculoskeletal System
Recommended Reading (Hamiton and Luttgens) - Chapter 2

Week 3  The Musculature
Recommended Reading (Hamiton and Luttgens) - Chapter 3

Week 4  The Neuromuscular System
Recommended Reading (Hamiton and Luttgens) - Chapter 4

Week 5  Terminology and Measurement in Biomechanics and description of human motion
Recommended Reading (Hamiton and Luttgens) - Chapters 10 and 11

Week 6  Biomechanics of Linear Motion
Recommended Reading (Hamiton and Luttgens) - Chapter 12

Week 7  Biomechanics of Rotary Motion
Recommended Reading (Hamiton and Luttgens) - Chapter 13

Week 8  Center of Gravity and Stability
Recommended Reading (Hamiton and Luttgens) - Chapter 14

Week 9  Posture
Recommended Reading (Hamiton and Luttgens) - Chapter 15

Week 10  Kinesiology of Fitness and Exercise
Recommended Reading (Hamiton and Luttgens) - Chapter 16

Week 11  Walking
Recommended Reading (Hamiton and Luttgens) - Chapter 19 (walking portion)

Week 12  Running
Recommended Reading (Hamiton and Luttgens) - Chapter 19 (running portion)

Week 13  Pushing and Pulling Movements
Recommended Reading (Hamiton and Luttgens) - Chapter 17

Week 14  Throwing and Striking Movements
Recommended Reading (Hamiton and Luttgens) - Chapter 18

Week 15  Swimming
Recommended Reading (Hamiton and Luttgens) - Chapter 20

Final Exam  As scheduled in Spring Course Schedule
GRADING: If you are absent (unexcused) from a class you will receive no points for that project. Points will be assigned for each of the activities and your grade will be based on the percentage of points you earn of the total number of points possible. 90% and up=A, 80-89%=B, 70-79%=C, 60-69%=D, <60%=F. A “+” grade will be given for ‘7-‘9 (i.e. B+ = 87-89) and a “-“ will be given for ‘0-‘3 (i.e. B- = 80-83)

Extra work WILL NOT be given as make-up or for extra credit. Late lab work will lose 10% of its value for each day (or % of a day) that it is late. If the group member with the lab is absent, all members will lose the points until the lab is handed in. If you miss an in-class activity there are really no chances to make up the points as they are designed for completion before the end of the class.

Labs: 10 points/lab (about 12 labs) = 40% of grade
Weekly Quiz: (lowest dropped) 10 points each = 40% of grade
Final Exam = 20% of grade

QUIZZES: Will be given during the first 20 minutes of each class and cover material that is in the suggested book, the notes and defined by the objectives for the unit. The quizzes will also cover material from the last class. They can be made up only with prior arrangement or valid reason. They cannot be made up after 48 hours without contacting Dr. Gaskill.

When studying, focus on: concepts, important terms, unit objectives, the notes in the facpac and details that appear necessary to understanding the material and do the practicums. The goal is to get you to read AND THINK about the material ahead of class. Many quizzes will have both an individual and a group component.

FINAL EXAM: Will cover concepts and integration of ideas. A study guide will be posted on the HHP 386 Class Web Site. Final will be a mix of fact, knowledge and integrative questions. Due to the large class size there will be more T/F, MC and short answer questions (some of them will be completed in your practicum groups) along with a few short essays. See the list of objective below.

The following are some objectives you should keep in mind to guide you through the semester. Each student should be able to:

1. Name and locate muscles and muscle groups important to each human motion that we study.
2. Analyze human movement patterns in terms of joint actions.
3. Identify and define distance, speed, velocity, force, inertia, mass, momentum, weight, and acceleration as they relate to linear and angular motion.
4. Use simple concepts of kinematics to analyze human motion.
5. Explain the effects of weight, normal reaction, friction, buoyancy, drag and lift on motion.
6. Explain the significance of impulse-momentum, work-energy, and conservation of momentum in linear motion.
7. State and evaluate the factors that affect stability.
8. Determine the anatomical and mechanical factors basic to the performance of an observed movement.
9. Observe and describe a movement technique accurately.
10. Identify factors that limit performance and establish a priority for improvement of performance.

Class notes can be found on the WEB at http://eres.lib.umt.edu
Class – HHP386 Listed under Gaskill or HHP
Student Password – HHP386