Department of Kinesiology
San José State University

KIN 154A
Instrumentation in Exercise Physiology & Biomechanics
Fall 2013

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Email: Peggy.Plato@sjsu.edu      James.Kao@sjsu.edu
Office Hours: Th 11:00 am - 1:00 pm
Other times available by appointment
Office Hours: TU 11:30 am – 1:30 pm
Send email to reserve an office hour appointment time. Other times available; send email to request a non-office hour appointment time

Class Days/Time
Sec 1 (Lecture) M 9:30 am - 10:20 am
Sec 2 (Lab)      MW 10:30 am - 12:20 pm
Sec 3 (Lab)     MW 12:30 pm - 2:20 pm

Classroom: SPX 208 (exercise physiol half); SPX 208 & 82 (biomech half)

Prerequisites: KIN 70, 155, 158 with grades of C- or better; Human Anatomy & Physiology, Introductory Chemistry, GE Math

Course Description
This class is designed to assist the student in becoming familiar and proficient with the methods and instruments of assessing physiological and biomechanical characteristics of human performance.

Kinesiology Undergraduate Major Program Learning Objectives (KIN PLOs)

At the end of a Bachelor of Science degree program in the Department of Kinesiology, students should expect:

(1) to obtain a critical understanding and the ability to apply theoretical and scientific knowledge from the subdisciplines in kinesiology for personal fitness, healthy lifestyles, sport, and/or therapeutic rehabilitation.
(2) to effectively communicate the essential theories, scientific applications, and ethical considerations related to kinesiology.
(3) to apply scholarship and practice of different movement forms to enhance movement competence in kinesiology.
(4) to recognize and apply sustainable approaches as they relate to kinesiology.
(5) to identify social justice and equity issues related to kinesiology for various populations.
Course-Specific Student Learning Objectives (SLOs)

Upon successful completion of the course, students will:

**Exercise Physiology**

1. demonstrate knowledge of instruments and procedures used in physiological testing. (KIN PLO 2)
2. demonstrate proficiency in administering selected physiological tests. (KIN PLO 1)
3. interpret and explain test results. (KIN PLO 1, 2)
4. demonstrate knowledge of the underlying principles, benefits, and limitations of selected physiological tests. (KIN PLO 1, 5)
5. demonstrate sensitivity to age, gender, cultural, and other individual differences as they relate to the physiological assessment of human performance. (KIN PLO 1, 5)
6. demonstrate critical thinking and problem solving skills. (KIN PLO 1)

**Biomechanics**

7. demonstrate knowledge and use of equipment and procedures utilized to collect biomechanical video data.
8. demonstrate proficiency in analyzing and interpreting biomechanical video data.
9. demonstrate knowledge and use of equipment and procedures utilized to collect biomechanical acceleration data.
10. demonstrate proficiency in analyzing and interpreting biomechanical acceleration data.

**Methods**

1. Lecture/discussion
2. Demonstration
3. Observation
4. Assigned readings
5. Laboratory experience - emphasis on hands-on practice to develop competence

**Course Content**

1. Anthropometry & body composition
   - Height, weight, circumferences, and bone diameters
   - Bioelectrical impedance analysis (BIA)
   - Skinfold measurements
   - Hydrostatic weighing
   - Air displacement plethysmography (Bod Pod)
   - Dual-energy X-ray absorptiometry (DXA)
2. Pulmonary function
   - Spirometry: static and dynamic lung volumes
   - Environmental conditions
   - Residual volume: measuring and estimating
3. Fitness & health assessments - Trifit system, Cholestech
(4) Qualitative and quantitative movement analysis – video & acceleration data

(5) Miscellaneous topics
   (a) Equipment calibration and operation
   (b) Selection of tests
   (c) Equipment specifications
   (d) Analysis and interpretation of results

Evaluation
The final course grade will be determined 50% from the exercise physiology unit and 50% from the biomechanics unit.

Calculating Grades

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A+</td>
<td>97-100%</td>
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<tr>
<td>A</td>
<td>93-96%</td>
</tr>
<tr>
<td>A-</td>
<td>90-92%</td>
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<tr>
<td>B+</td>
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<tr>
<td>B</td>
<td>83-86%</td>
</tr>
<tr>
<td>B-</td>
<td>80-82%</td>
</tr>
<tr>
<td>C+</td>
<td>77-79%</td>
</tr>
<tr>
<td>C</td>
<td>73-76%</td>
</tr>
<tr>
<td>C-</td>
<td>70-72%</td>
</tr>
<tr>
<td>D+</td>
<td>67-69%</td>
</tr>
<tr>
<td>D</td>
<td>63-66%</td>
</tr>
<tr>
<td>D-</td>
<td>60-62%</td>
</tr>
<tr>
<td>F</td>
<td>&lt;60%</td>
</tr>
</tbody>
</table>

Requirements

- Consistent with SJSU guidelines, it is expected that students will spend a minimum of 45 hours for each unit of credit (normally three hours per unit per week), including preparing for class, participating in course activities, completing assignments, etc.
- Course reader for exercise physiology — available at first class. After the first class, available at Maple Press (481 E. San Carlos, 297-1000)
- Battery-operated calculator
- Biomechanics chapter and laboratory handouts: Available on Dr. Kao’s website
- Recommended textbooks for biomechanics half of course:
University Policies

Academic Integrity
The University’s Academic Integrity Policy is available at http://sa.sjsu.edu/judicial_affairs/faculty_and_staff/academic_integrity/index.html. Your own commitment to learning, as evidenced by your enrollment at San José State University and the University’s integrity policy, require you to be honest in all your academic course work. Faculty members are required to report all infractions to the Office of Student Conduct and Ethical Development, located at http://www.sa.sjsu.edu/judicial_affairs/index.html. Plagiarism and cheating are serious offenses. Students should carefully read the attached information on academic integrity and plagiarism.

Campus Policy in Compliance with the American Disabilities Act
If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities requesting accommodations must register with the Accessible Education Center at http://www.drc.sjsu.edu/ to establish a record of their disability. The AEC is located in ADM 110 (408-924-6000 [voice] or 408-924-5990 [TDD]).

Adding, Dropping, Late Withdrawals, and Incompletes
September 3 is the last day to drop this course without a “W” being assigned. According to University policy, dropping this course after Sept. 3 is permissible only for serious and compelling reasons, and requires written documentation. Unsatisfactory performance in course work is not a serious and compelling reason. The last day to add the course is Sept. 10. However, students who receive add codes should use them as soon as possible. The university policies on late withdrawals and incompletes will be strictly followed.

Recording in Class
Common courtesy and professional behavior dictate that you notify individuals when you are recording them. You must obtain the instructor’s permission to make audio or video recordings in this class. Such permission allows the recordings to be used for your private, study purposes only. The recordings are the intellectual property of the instructor; you have not been given any rights to reproduce or distribute the material." Recording any students during class activities requires permission of those individuals as well as permission from the instructor.

Course Materials
Course material developed by the instructor is the intellectual property of the instructor and cannot be shared publicly without his/her approval. You may not publicly share or upload instructor generated material for this course, such as exam or quiz questions, lecture notes, or hand-outs, without instructor consent.
The following information on academic integrity has been excerpted from the San José State University Academic Integrity Policy (policy S04-12). The complete policy is available at http://www2.sjsu.edu/senate/S04-12.pdf.

SAN JOSE STATE UNIVERSITY

ACADEMIC INTEGRITY POLICY

The University emphasizes responsible citizenship and an understanding of ethical choices inherent in human development. Academic honesty and fairness foster ethical standards for all those who depend upon the integrity of the university, its courses, and its degrees. This policy sets the standards for such integrity and shall be used to inform students, faculty and staff of the university’s Academic Integrity Policy. The public is defrauded if faculty and/or students knowingly or unwittingly allow dishonest acts to be rewarded academically and the university’s degrees are compromised.

Student Role

It is the role and obligation of each student to:

1. Know the rules that preserve academic integrity and abide by them at all times. This includes learning and following the particular rules associated with specific classes, exams and/or course assignments. Ignorance of these rules is not a defense to the charge of violating the Academic Integrity Policy.

2. Know what the consequences of violating the Academic Integrity Policy will be, students’ appeal rights, and the procedures to be followed in the appeal.

3. Foster academic integrity among peers.
1.0 Definitions of Academic Dishonesty

1.1 Cheating
At SJSU, cheating is the act of obtaining or attempting to obtain credit for academic work through the use of any dishonest, deceptive, or fraudulent means. Cheating at SJSU includes but is not limited to:

1.1.1 Copying, in part or in whole, from another’s test or other evaluation instrument including homework assignments, worksheets, lab reports, essays, summaries, quizzes, etc.;
1.1.2 Submitting work previously graded in another course unless this has been approved by the course instructor or by departmental policy;
1.1.3 Submitting work simultaneously presented in two courses, unless this has been approved by both course instructors or by the department policies of both departments;
1.1.4 Using or consulting, prior to, or during an examination, sources or materials not authorized by the instructor;
1.1.5 Altering or interfering with the grading process;
1.1.6 Sitting for an examination by a surrogate, or as a surrogate;
1.1.7 Any other act committed by a student in the course of their academic work which defrauds or misrepresents, including aiding or abetting in any of the actions defined above.

1.2 Plagiarism
At SJSU plagiarism is the act of representing the work of another as one’s own without giving appropriate credit, regardless of how that work was obtained, and/or submitting it to fulfill academic requirements. Plagiarism at SJSU includes but is not limited to:

1.2.1 The act of incorporating the ideas, words, sentences, paragraphs, or parts of, and/or the specific substance of another’s work, without giving appropriate credit, and/or representing the product as one’s own work;
1.2.2 Representing another’s artistic/scholarly works such as musical compositions, computer programs, photographs, paintings, drawings, sculptures, or similar works as one's own.

2.0 Notification of Standards of Detecting Plagiarism
2.1 SJSU or its faculty may subscribe to and/or use plagiarism detection services.
Biomechanical Instrumentation

Evaluation

50 points are available
a) Labs, Quizzes, and Assignments (30% - 15 points)
b) Lab Practical Exam (35% - 17.5 points)
c) Biomechanics Concepts Exam (35% - 17.5 points)
d) Make-up Labs and Quizzes are NOT permitted
e) Make-up exams are permitted ONLY for serious and compelling reasons.

Laboratory Work

a) Students are expected to attend and participate regularly in laboratories
b) Lab assignments must be turned in by the due date assigned for each.
c) Late lab assignments will not be accepted

tentative course outline for biomechanics

<table>
<thead>
<tr>
<th>Introduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Course Syllabus (i.e., Greensheet)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Biomechanical Model for Maximizing Jump Height/Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Review of Biomechanics Conceptual Knowledge</td>
</tr>
<tr>
<td>• Data Collection and Analysis Concepts</td>
</tr>
<tr>
<td>a) 2D Video</td>
</tr>
<tr>
<td>b) 3D Acceleration</td>
</tr>
<tr>
<td>• Data Collection Activities</td>
</tr>
<tr>
<td>c) 2D Video</td>
</tr>
<tr>
<td>d) 3D Acceleration</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Biomechanical Model for Minimizing Sum of Joint Forces when Landing after a Vertical/Horizontal Jump</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Review of Biomechanics Conceptual Knowledge</td>
</tr>
<tr>
<td>• Data Collection and Analysis Concepts</td>
</tr>
<tr>
<td>a) 2D Video</td>
</tr>
<tr>
<td>b) 3D Acceleration</td>
</tr>
<tr>
<td>• Data Collection Activities</td>
</tr>
<tr>
<td>c) 2D Video</td>
</tr>
<tr>
<td>d) 3D Acceleration</td>
</tr>
<tr>
<td>Biomechanical Model for Minimizing Movement Time for Horizontal Locomotion</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>• Review of Biomechanics Conceptual Knowledge</td>
</tr>
<tr>
<td>• Data Collection and Analysis Concepts</td>
</tr>
<tr>
<td>a) 2D Video</td>
</tr>
<tr>
<td>b) 3D Acceleration</td>
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</tr>
<tr>
<td>c) 2D Video</td>
</tr>
<tr>
<td>d) 3D Acceleration</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Biomechanical Model for Maximizing Projectile Speed and Horizontal Distance Travelled</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Review of Biomechanics Conceptual Knowledge</td>
</tr>
<tr>
<td>• Data Collection and Analysis Concepts</td>
</tr>
<tr>
<td>a) 2D Video</td>
</tr>
<tr>
<td>b) 3D Acceleration</td>
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<tr>
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</tr>
<tr>
<td>c) 2D Video</td>
</tr>
<tr>
<td>d) 3D Acceleration</td>
</tr>
</tbody>
</table>
**Exercise Physiology Instrumentation**

<table>
<thead>
<tr>
<th>Evaluation</th>
<th>Weighting</th>
<th>Student Learning Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competency Tests (2% each)</td>
<td>10%</td>
<td>1,2</td>
</tr>
<tr>
<td>Professionalism, Care of Equipment</td>
<td>3%</td>
<td>1</td>
</tr>
<tr>
<td>Anthropometric Lab</td>
<td>5%</td>
<td>1,3</td>
</tr>
<tr>
<td>BIA Lab</td>
<td>5%</td>
<td>1,3</td>
</tr>
<tr>
<td>Skinfold Lab</td>
<td>5%</td>
<td>1,3</td>
</tr>
<tr>
<td>Hydrostatic Weighing Lab</td>
<td>5%</td>
<td>1,3</td>
</tr>
<tr>
<td>Bod Pod Lab</td>
<td>5%</td>
<td>1,3</td>
</tr>
<tr>
<td>Spirometry Lab</td>
<td>5%</td>
<td>1,3</td>
</tr>
<tr>
<td>Trifit &amp; Cholestech Lab</td>
<td>5%</td>
<td>1,3</td>
</tr>
<tr>
<td>Body Composition Project</td>
<td>12%</td>
<td>1,3,5,6</td>
</tr>
<tr>
<td>Quizzes (6 of 7 counted)</td>
<td>15%</td>
<td>3,4,6</td>
</tr>
<tr>
<td>Lab Practical Exam</td>
<td>10%</td>
<td>1,2,6</td>
</tr>
<tr>
<td>Written Midterm</td>
<td>15%</td>
<td>3,4,5,6</td>
</tr>
</tbody>
</table>

**Competency Tests**

Students will demonstrate competency on the following:
- Measuring height
- Measuring weight
- Measuring skinfolds at the following sites: chest, triceps, subscapular, abdomen, suprailliac, and thigh
- Performing hydrostatic weighing
- Measuring barometric pressure

**Grading on competency tests:**

A (95%) = excellent technique (performed smoothly & with confidence, accurate results)
B (85%) = good technique (minor corrections needed)
F (50%) = poor or weak technique (significant errors, questionable data)
0 pts = did not attempt competency

Students receiving less than an A grade will receive feedback and may, after further practice, retake the competency on another day. If a student does not attempt a competency by the first deadline date, the score may be lowered one letter grade for each week, or part of a week, that the deadline is missed. Students are responsible for scheduling their own competency tests. These may be scheduled during labs or other nonclass times (if the instructor cannot test everyone during the scheduled lab period). If the test is not taken during a laboratory period, students must bring a client when one is needed. The last day to
complete competencies is during the practical examination (if time allows, maximum of 1 competency tested.)

**Professionalism, Care of Equipment**

This is a professional preparation course. Students are expected to:

- **Be fully prepared**; actively and enthusiastically participate in all laboratory sessions and class discussions.
- **Read assigned material and lab instructions BEFORE class.** (Lecture and lab time will be used to present material, help students master techniques, and check competencies. Students are directed to the green sheet and course reader for answers to many of their procedural questions.)
- Bring textbook, calculator, course reader, and other necessary supplies to class.
- Dress appropriately for scheduled activities.
- Participate in demonstrations and data collection.
- Enthusiastically serve as a client for others.
- PRACTICE, PRACTICE, PRACTICE techniques. **Use your class time effectively!** Ask for guidance from instructor if having difficulty mastering a technique.
- Complete competencies and assignments on time.
- Use equipment properly; clean and put away all equipment before leaving lab area.
- Keep lab clean. No food or drinks are allowed in the lab, except water.
- Maintain lab security (confidentiality of omnilock code; lock lab if leaving for even 1 min).

Students who consistently demonstrate professionalism, as described above, WILL be able to complete all lab assignments and competencies in a timely manner. Students who choose not to use laboratory time effectively may not complete all assignments, and should not expect the instructor to ensure that they do. **In an 8-week, lab-intensive class, if you fall behind it may be impossible to catch up.**

The most effective class results when EACH class member makes an INDIVIDUAL COMMITMENT to be an active participant in the teaching/learning process. Individual contributions and differing viewpoints will be appreciated and respected. Students are responsible for material presented and announcements made in each class. Students who miss class (a rare occurrence!) are responsible for obtaining material from another student BEFORE seeing the instructor about content missed.

**Labs and Body Composition Project**

Guidelines and forms are in the course reader. Refer to the class schedule for due dates. Written work must be typed or neatly hand-written. Remember to proofread and check for completeness before turning in.

<table>
<thead>
<tr>
<th>Due Date</th>
<th>Received</th>
<th>Grade Lowered</th>
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<tbody>
<tr>
<td>Monday</td>
<td>After class Mon. through Wed.</td>
<td>1 grade step (eg, B+ → B)</td>
</tr>
<tr>
<td></td>
<td>Thurs. or Fri.</td>
<td>2 grade steps (eg, B+ → B-)</td>
</tr>
<tr>
<td></td>
<td>Sat. through following Mon.</td>
<td>1 full grade (eg, B+ → C+)</td>
</tr>
<tr>
<td>Wednesday</td>
<td>After class Wed. through Fri.</td>
<td>1 grade step</td>
</tr>
<tr>
<td></td>
<td>Sat. through Mon.</td>
<td>2 grade steps</td>
</tr>
<tr>
<td></td>
<td>Tues. or following Wed.</td>
<td>1 full grade</td>
</tr>
</tbody>
</table>

Students must speak with the instructor regarding assignments that are over 1 week late.
Laboratory Practical Exam

Students will demonstrate skill on two assessments:
- Two sites covered in class for girths OR bone diameters (sites and girths/diameters will both be randomly determined, AND
- Spirometry (Collins spirometer)

A 25 minute test session will be scheduled; all assessments must be completed in this time period.

After a student is tested, he/she will serve as the client for the next individual and should be dressed appropriately. If there is no test immediately before, the student being tested must bring a client. The client may NOT be a class member unless he/she has been tested.

Grades will be based on ability to: (a) give accurate and complete instructions to participant, (b) administer test correctly and obtain accurate data. **Calculations are not required during the laboratory practical.**

During the practical exam, students who realize they have made an error should correct the error. (It's better to correct an error than to hope/think it will be undetected. Proficiency in testing includes recognizing your errors.)

When administering a test, collect only the measurements necessary to obtain accurate data. You do not need to fill in every blank on the data sheet.

**Grading:**
- A (+,-) = No errors or very minor errors, technique & data are good
- B (+,-) = Some errors, needs additional practice, but data are good
- C (+,-) = Significant errors, needs correction and practice
- D (+,-) = Poor technique, accuracy of data is highly questionable
- F = Unable to obtain data without significant help, or data are invalid

**Converting Letter Grades to Percentages**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A+</td>
<td>98%</td>
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<tr>
<td>A</td>
<td>95%</td>
</tr>
<tr>
<td>A-</td>
<td>91%</td>
</tr>
<tr>
<td>B+</td>
<td>88%</td>
</tr>
<tr>
<td>B</td>
<td>85%</td>
</tr>
<tr>
<td>B-</td>
<td>81%</td>
</tr>
<tr>
<td>C+</td>
<td>78%</td>
</tr>
<tr>
<td>C</td>
<td>75%</td>
</tr>
<tr>
<td>C-</td>
<td>71%</td>
</tr>
<tr>
<td>D+</td>
<td>68%</td>
</tr>
<tr>
<td>D</td>
<td>65%</td>
</tr>
<tr>
<td>D-</td>
<td>61%</td>
</tr>
<tr>
<td>F</td>
<td>≤ 50%</td>
</tr>
</tbody>
</table>

Quizzes & Written Midterm

In-class quizzes (Quizzes 1-5) and the midterm will cover theoretical background, use of equipment, data collection and interpretation.

Questions may include true-false, multiple choice, short answer, problems, and calculations.

• Pre-lab questions (completed online – Canvas) **MUST** be completed before 8:00 am on the lab day. There is **no** make-up or second chance to complete the pre-lab questions, so **plan accordingly!** If you start early enough, you will have options if there are technological problems (e.g., on-campus computers if your computer breaks or you have internet connection problems). If you wait until the last minute and there are technological problems, accept the consequences without complaint. The total points on the pre-lab questions will be equivalent to two quiz scores.

Quiz 6 = pre-lab questions on skinfolds, hydrostatic weighing, and ADP. Quiz 7 = pre-lab questions on environmental conditions/pulmonary and health/fitness assessments. Pre-lab questions are to be completed independently, **NOT** in a group. **Carefully read the information on the University’s Academic Integrity Policy; violations will be reported with appropriate sanctions taken.** **Earning your**
college degree is important – think carefully before jeopardizing this process!

Six of seven quiz scores will be counted; the lowest quiz score will be dropped.

Make-ups for in-class quizzes and exams are permitted only for illness and emergency (TRULY EXTRAORDINARY CIRCUMSTANCES). The student is responsible for notifying the instructor and making arrangements at the earliest possible time. In most cases, the quiz/exam must be completed before the next class meeting. All requests for make-up exams will be evaluated on an individual basis. Again, there is NO MAKE-UP for missed pre-lab questions.

### Example

<table>
<thead>
<tr>
<th>Component</th>
<th>% Earned</th>
<th>X</th>
<th>Points Possible</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>85%, 95%, 95%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Avg = 93%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professionalism</td>
<td>90%</td>
<td>X</td>
<td>3</td>
<td>2.7</td>
</tr>
<tr>
<td>Anthropometric Lab</td>
<td>90%</td>
<td>X</td>
<td>5</td>
<td>4.5</td>
</tr>
<tr>
<td>BIA Lab</td>
<td>94%</td>
<td>X</td>
<td>5</td>
<td>4.7</td>
</tr>
<tr>
<td>Skinfold Lab</td>
<td>82%</td>
<td>X</td>
<td>5</td>
<td>4.1</td>
</tr>
<tr>
<td>Hydrostatic Lab</td>
<td>85%</td>
<td>X</td>
<td>5</td>
<td>4.25</td>
</tr>
<tr>
<td>Bod Pod Lab</td>
<td>95%</td>
<td>X</td>
<td>5</td>
<td>4.75</td>
</tr>
<tr>
<td>Pulmonary Lab</td>
<td>75%</td>
<td>X</td>
<td>5</td>
<td>3.75</td>
</tr>
<tr>
<td>Trifit Lab</td>
<td>100%</td>
<td>X</td>
<td>5</td>
<td>5.0</td>
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<tr>
<td>Body Comp. Project</td>
<td>92%</td>
<td>X</td>
<td>12</td>
<td>11.04</td>
</tr>
<tr>
<td>Quizzes</td>
<td>Avg = 82%</td>
<td>X</td>
<td>15</td>
<td>12.3</td>
</tr>
<tr>
<td>Lab Practical Exam</td>
<td>A-, B+, 91%, 88%</td>
<td>X</td>
<td>10</td>
<td>8.95</td>
</tr>
<tr>
<td></td>
<td>Avg = 89.5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Written Midterm Exam</td>
<td>86%</td>
<td>X</td>
<td>15</td>
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</tbody>
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Total for exercise physiology half of course

88.24 out of 100 pts converted to 44.12 out of 50 pts for exercise physiology half of course

50 pts possible in exercise physiology half; 50 pts possible in biomechanics half of course

12
PROPOSED SCHEDULE
(Subject to change with fair notice – any changes will be announced in class)

*Readings from Heyward & Wagner text. In addition to the text assignments, students should read the appropriate sections of the exercise physiology course reader BEFORE class.

CT: Date for completion of first attempt at competency test

<table>
<thead>
<tr>
<th>DATE</th>
<th>TOPIC</th>
<th>*TEXT ASSIGNMENT</th>
<th>DUE</th>
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</thead>
<tbody>
<tr>
<td>Wed., Aug. 21</td>
<td>Introduction &amp; Course Overview, Body Composition Assessment Lab: Anthropometric Measurements (Height &amp; Weight)</td>
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<tr>
<td>Mon., Aug. 26</td>
<td>Lec: Anthropometric Measurements &amp; BIA Lab: Anthropometric Measurements (Height, Weight, Girths, Diameters) &amp; BIA</td>
<td>Chaps. 1, 5, 6</td>
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<tr>
<td>Wed., Aug. 28</td>
<td>Lab: Anthropometric Measurements &amp; BIA</td>
<td>Chap. 10</td>
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<td>Mon., Sept. 2</td>
<td>Labor Day – Campus Closed</td>
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<tr>
<td>Wed., Sept. 4</td>
<td>Lab: Skinfold Measurements - lecture &amp; lab</td>
<td>Chaps. 2, 4</td>
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<tr>
<td>Mon., Sept. 9</td>
<td>Lec: Hydrostatic Weighing QUIZ 1 (Anthropometric Measurements &amp; BIA) Lab: Skinfolds &amp; Hydrostatic Weighing</td>
<td>pp. 27-33, 37-40</td>
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<td>Mon., Sept. 11</td>
<td>Lab: Skinfolds &amp; Hydrostatic Weighing</td>
<td>Chap. 15</td>
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<td>Wed., Sept. 16</td>
<td>Lec: Air Displacement Plethysmography (ADP or Bod Pod) QUIZ 2 (Skinfolds) Lab: Hydrostatic Weighing &amp; Bod Pod</td>
<td>pp. 33-37</td>
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<td>Wed., Sept. 18</td>
<td>Lab: Bod Pod &amp; DXA Demonstration</td>
<td>pp. 40-47</td>
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<td>Mon., Sept. 23</td>
<td>Lec: Environmental Conditions &amp; Pulmonary Function &lt;br&gt;<strong>QUIZ 3</strong> (Hydrostatic Weighing)  &lt;br&gt;Lab: Bod Pod &amp; Spirometry</td>
<td>Pre-lab on Environ. Conditions &amp; Pulmonary</td>
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<td>Wed., Sept. 25</td>
<td>Lab: Spirometry</td>
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<td>Bod Pod Lab</td>
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<td>Mon., Sept. 30</td>
<td>Lec: Health &amp; Fitness Assessments &lt;br&gt;<strong>QUIZ 4</strong> (ADP &amp; DXA)  &lt;br&gt;Lab: Spirometry, Trifit &amp; Cholestech</td>
<td>Pre-lab on Health &amp; Fitness Assmts.  &lt;br&gt;Body Comp Project  &lt;br&gt;CT: Hydro. Weigh  &lt;br&gt;CT: $P_{bar}$</td>
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<td>Wed., Oct. 2</td>
<td>Lab: Trifit &amp; Cholestech</td>
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<td>Spirometry Lab</td>
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<td>Mon., Oct. 7</td>
<td>Lec: Catch Up &amp; Review &lt;br&gt;<strong>QUIZ 5</strong> (Envir. Conditions &amp; Pulmonary Function)  &lt;br&gt;Lab: Trifit System &amp; Cholestech</td>
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<td>Wed., Oct. 9</td>
<td>Lab: <strong>Lab Practicals</strong></td>
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<td>Trifit Lab</td>
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<td>Mon., Oct. 14</td>
<td>Lec: Body Comp Data &lt;br&gt;Lab: <strong>Lab Practicals</strong></td>
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<tr>
<td>Wed., Oct. 16</td>
<td><strong>Midterm Exam (written)</strong></td>
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<tr>
<td>Mon., Oct. 21-</td>
<td><strong>BIOMECHANICS</strong></td>
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<td>A Supplemental Handout will be given on Monday, October 21, 2013</td>
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<td>Wed., Nov. 6</td>
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<td>Mon., Nov. 11</td>
<td><strong>Veterans’ Day – Campus Closed</strong></td>
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<td>Wed., Nov. 13-</td>
<td><strong>BIOMECHANICS</strong></td>
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<td>Mon., Dec. 9</td>
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<td>Fri., Dec. 13</td>
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<td><strong>Final Exam</strong></td>
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