COURSE DESCRIPTION: An integrated approach to the study of human physiology as it pertains to physical fitness, activity, performance, and wellness. A scientific basis for connecting physical therapy to physical activity, performance, and health is presented. The course includes presentation of metabolic, hormonal, and structural systems of the body related to activity and performance. The course provides an opportunity for the student physical therapist to develop the skills necessary for implementing activity programs and exercise prescription for the normal, healthy individual. Experiences will be provided for the students to administer and interpret physiological tests for setting appropriate exercise and health goals for clients and determining if the goals have been met. Experiences related to psychological, social, cultural, and vocational aspects of exercise are included. The course offers learning experiences through problem/case study analysis and laboratory assessments with an emphasis on optimal health, wellness, and performance.

COURSE COORDINATOR: Dr. Shelly D. Weise, Ed.D. PT
Professor
Office: HHS 224E
325-942-2545 or 325-486-6474
Email: shelly.weise@angelo.edu

COURSE FACULTY: Dr. You-jou Hung, Ph.D., PT
Associate Professor
HHS 224N
Email: yhung@angelo.edu
325-942-2742

OFFICE HOURS: By appointment

COURSE LOCATION: CHP PT Labs-Room 143
Center for Human Performance Building (CHP)

MEETING HOURS: Pay careful attention to the teaching schedule as to meeting times for this “mixed” course. Lecture and Labs are scheduled on campus in CHP 143 unless otherwise noted.

CLOCK HOURS: 32 hours of lecture
32 hours of laboratory

COURSE PREREQUISITES: Student in Doctor of Physical Therapy Program

COURSE OBJECTIVES:
Experiences in the classroom and laboratory are designed such that at the completion of the course the student will be able to:

1) Describe and contrast the role of carbohydrates, lipids and proteins in metabolism at rest and with activity. [CAPTE Standard 7A, 7C]

2) Describe and contrast the role of vitamins, minerals and water in metabolism at rest and with activity. [CAPTE Standard 7A, 7C]
3) Compare nutrient and energy intake between sedentary and physically active counterparts; recommend basic information regarding optimal nutrient intake for physically active individuals. [CAPTE Standard 7A, 7C, 7D34]

4) Instruct and educate a patient/client and their family/significant relative on the concept of “calories in = calories out” for weight management including daily intake/output assessment. [CAPTE Standard 7A, 7D27h, 7D12]

5) Outline the fundamental scientific pathways of energy transfer with utilization of carbohydrates, protein and lipids during rest and activity. [CAPTE Standard 7A, 7C]

6) Describe methods of measurement of human energy expenditure during rest and physical activity. [CAPTE Standard 7D19a, 7D19w, 7D34, 7A]

7) Discuss and diagram the normal anatomy and physiology of the human cardiac and pulmonary systems. [CAPTE Standard 7A, 7C]

8) Discuss and diagram the normal anatomy and physiology of the human musculoskeletal and neuromuscular systems. [CAPTE Standard 7A, 7C]

9) Describe the responses of the human cardiac and pulmonary systems as they are placed under various exercise stresses. [CAPTE Standard 7A, 7C, 7D19a, 7D19e, 7D19w]

10) Describe the responses of the human musculoskeletal and neuromuscular systems as they are placed under various exercise stresses. [CAPTE Standard 7A, 7C, 7D19o, 7D19n, 7D19p]

11) Contrast anaerobic and aerobic energy output and how this difference plays a role in sports events and physical therapy activities. [CAPTE Standard 7A, 7C, 7D34]

12) Discuss principles of exercise training as they relate to the neuromuscular and cardiopulmonary systems. [CAPTE Standard 7A, 7C, 7D34]

13) Describe/demonstrate the foundations of and the processes required for body composition assessment. [CAPTE Standard 7A, 7C, 7D19b]

14) Demonstrate the performance of aerobic and anaerobic assessments in the laboratory setting. [CAPTE Standard 7A, 7C, 7D19a, 7D19e, 7D19w, 7D31]

15) Demonstrate a “hands on” ability to successfully perform vital signs objective measurements. [CAPTE Standard 7A, 7C, 7D19a, 7D19e, 7D19w]

16) Discuss the societal problem of obesity and weight management. Demonstrate the ability to set up an exercise and weight management exercise prescription program. [CAPTE Standard 7A, 7C, 7D34, 7D36, 7D27a, 7D27d, 7D27h, 7D27i, 7D24, 7D10, 7D11]

17) Display the process of evidenced-based wellness promotion through exercise prescription in a clinical case application. [CAPTE Standard 7A, 7C, 7D34, 7D36, 7D27a, 7D27d, 7D27h, 7D27i, 7D24, 7D10, 7D11]

TEACHING METHODS/PHILOSOPHY:

On-line discussion, laboratory demonstration and participation, case study analysis, multi-media programs (including power point outlines), self-instructional materials, reading assignments, Internet activities (Blackboard), and student projects.

TENTATIVE SCHEDULE: SEE ATTACHED

REQUIRED TEXTS:


REQUIRED INSTRUMENTS FOR LAB:

<table>
<thead>
<tr>
<th>Lab Instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stethoscope (see coordinator for approval)</td>
</tr>
<tr>
<td>Watch with second hand; Calculator</td>
</tr>
<tr>
<td>Blood Pressure Cuff /Sphygmomanometer-- (see coordinator for approval)</td>
</tr>
<tr>
<td>All other equipment provide</td>
</tr>
</tbody>
</table>

LAB ATTIRE (REQUIRED):

<table>
<thead>
<tr>
<th>Attire Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loose fitting shorts/T-shirt</td>
</tr>
<tr>
<td>Sports bra (females); Running shoes</td>
</tr>
</tbody>
</table>

**GRADING/EVALUATIVE PROCEDURES:**

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation (Discussion Board-25% posting; 75% content)</td>
<td>60 points</td>
</tr>
<tr>
<td>Lab Reports 10 points each (6)</td>
<td>60 points</td>
</tr>
<tr>
<td>Quizzes 25 points each (4)</td>
<td>100 points</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>100 points</td>
</tr>
<tr>
<td>Clinical Case Study</td>
<td>80 points</td>
</tr>
<tr>
<td>Final Exam</td>
<td>100 points</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>500 points</strong></td>
</tr>
</tbody>
</table>

Exams will be comprehensive and based upon materials provided in lecture, assigned textbook readings, supplemental readings, and laboratory activities. Students must be present for all exams and quizzes. Lab reports are due **NO LATER THAN** one week after the lab topic being reported is completed unless otherwise noted. Mastery for this course is set at 80%. There will be no curve.

**GRADING:**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>450 +</td>
</tr>
<tr>
<td>B</td>
<td>399 - 449</td>
</tr>
<tr>
<td>C</td>
<td>350 - 398</td>
</tr>
<tr>
<td>F</td>
<td>&lt; 350</td>
</tr>
</tbody>
</table>

**HONOR CODE STATEMENT:**

Our students believe that ASU students should maintain complete honesty and integrity in their academic pursuits.

The Honor Code at ASU describes expected academic behavior of both faculty and students, and it consists of an agreement between the student and the academic community to foster academic integrity, to value student educational goals, and to maintain the positive academic reputation of ASU. Angelo State University expects all students and faculty to engage in all academic pursuits in a manner that is above reproach and to maintain complete honesty and integrity in the academic experiences both in and out of the classroom.

ASU students and faculty will not participate or condone

- Plagiarism
- Cheating
- Fabrication of data
- Misrepresentation of information
- Misuse of library materials
- Misuse of technology
- Conspiring with others to commit these acts

ASU students are responsible for understanding the Honor Code as well as the individual academic requirements and stipulations for each course. This includes carefully reading the *Angelo State University Student Handbook* and reading the syllabus of each course. Students should ask for...
clarification of any ambiguous aspect of the syllabus.
To facilitate this code of ethical conduct, ASU has an Academic Integrity Committee, a committee composed of both students and faculty, which has the responsibility of reviewing cases of suspected academic dishonesty, which may be brought to it. The committee’s membership of students and faculty reinforces ASU’s commitment to academic integrity in and out of the classroom.

STUDENTS WITH DISABILITIES:

Statement on Disabilities
ASU is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or activities of the university, or be subjected to discrimination by the university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA), and subsequent legislation.

Student Affairs is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability, and it is the student’s responsibility to initiate such a request by emailing ADA@angelo.edu, or by contacting:

Mrs. Dallas A. Swafford
Director of Student Development
Office of Student Affairs
University Center, Suite 112
325-942-2047 Office
Dallas.Swafford@angelo.edu

Persons with disabilities (OP 10.15), which may warrant academic accommodations must contact the Student Services Office in order to request such accommodations prior to any accommodations being implemented. You are encouraged to make this request early in the semester so that appropriate arrangements can be made.

Students with disabilities who request reasonable accommodations must meet with the Course Coordinator within the first week of classes. Reasonable accommodations will be provided as authorized by the Student Services Office as long as course requirements are not compromised.

Faculty will provide no accommodations without authorization from the Student Services Office. It is the student’s responsibility to be a self-advocate when requesting accommodations.

Faculty will provide accommodations for student absences for observance of a religious holy day(s) (OP 10.19). Students should make every effort to inform a faculty member at the beginning of the semester regarding these absences.

ATTENDANCE/TARDINESS POLICY:

Attendance for all classes is required (exception by instructor permission only). In this mixed format, on-line attendance will be monitored by graduate-level participation in the discussion board format as indicated. It is expected that you will post substantive comments as your class contribution for discussion. In order to be substantive, students must support their position with the source of your ideas: experiential or from your text or other literature. Please cite literature in AMA style as indicated. You may professionally respond to the thoughts/questions posted by your instructor or classmates. You may agree or disagree with postings but include a rationale for your comments as indicated.

Attendance and promptness to class is considered professional behavior. As this department is preparing potential professionals in the area of physical therapy, it is part of our expectation that student presence and timeliness will be held in highest regard. Tardiness is a disruption to the instructor and fellow students. A student is considered tardy if he/she arrives for class after the instructor has begun
class activities. Please see the following related to implications from excessive lateness or absences without a reasonable excuse:
   a. First offense- verbal warning
   b. Second offense- second verbal warning, initiation of Disciplinary Tracking Form.
   c. Third offense- 1% off final course grade
   d. 1% off final course grade for each additional unexcused tardy or absence

Per the student handbook, **2 or more occurrences combined or mixed will result in the initiation of a Disciplinary Tracking Form.**

If the student is unable to attend class, it is the student’s responsibility to either call the PT office at 942-2545 or the office of the professor of the class directly. This notification should be made prior to commencement of the class.

Continued issues with tardiness/attendance across all courses will result in disciplinary probation and will be referred to the PT faculty for consideration of options, including program dismissal.

The PT faculty is not oblivious to doctor’s appointments and other potential hazards and emergencies in daily life. Simply taking responsibility to notify the office or the professor if issues arise is considered professional behavior. Please do not rely on a classmate or other form of notification, as these have proven unreliable in years past.

**ATTENDANCE AT ALL SCHEDULED EXAMINATIONS IS MANDATORY.** Any unexcused absence from an examination will automatically result in a score of ZERO for that examination. Any student absent from examinations due to illness or injury must have a written justification from their physician. **Absence from an examination for any other reason must be excused before the time of the scheduled examination** or brought about by a very serious circumstance. For excused absences only, make-up examinations must be taken no later than one week after the student returns to class. Extended absences must be approved by the Program Director of Physical Therapy.
<table>
<thead>
<tr>
<th>Date</th>
<th>Lecture Content</th>
<th>Lab Content</th>
<th>Reading</th>
<th>Assignment(s) for week</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 1, 2018</td>
<td>Intro to Exercise Physiology; Nutritional Aspects of Human Performance</td>
<td>June 1, Friday  [ALL meet], HHS 210, 2:00 pm&lt;br&gt;Intro to Course &amp; Online Concepts&lt;br&gt;Key Concepts, Weise (Chs. 1,2,3,31)</td>
<td>MKK: Ch. 1, 2, 3 [Review on own]&lt;br&gt;Lab 1-Handout&lt;br&gt;Ch. 31: Age &amp; Exercise</td>
<td>Discussion Board 1, Lab 1&lt;br&gt;DB1 and Lab1 – 3 hours online</td>
</tr>
<tr>
<td>June 5 and 7, 2018</td>
<td>Energy Transfer at Rest and with Exercise</td>
<td>Lab 2 (on-line)</td>
<td>MKK: Ch. 5,6,7 The Problem of Obesity – Topic of the Week – a feature on the literature to be posted for Class Discussion</td>
<td>Lab 1 and DB1 Due by Thursday, June 7, 12 noon&lt;br&gt;Lab2/DB2 Assigned&lt;br&gt;DB2 Due Tuesday, June 12, 12 noon</td>
</tr>
<tr>
<td>June 12 &amp; 14, 2018</td>
<td>Energy Expenditure Measurement at Rest and with Activity</td>
<td>June 12 [ALL meet], CHP 143, 8:30 – 11:30 am&lt;br&gt;Key Concepts, Weise (Chs. 5,6,7)&lt;br&gt;June 12 [ALL meet], CHP 143, 1:30 – 4:30 pm&lt;br&gt;Key Concepts, Weise (Chs. 8 – 11)</td>
<td>MKK: Ch. 8,9,10,11 Ch. 31: Age &amp; Exercise-Topic of the Week- feature on the literature to be posted on Blackboard for Class Discussion</td>
<td>Thursday, June 14: Key Concepts (review-Dr. Weise, 8:30 – 10:00 am)&lt;br&gt;Quiz 1 on Thursday, June 14 10:00 am – 11:30 am (Dr. Weise to proctor)&lt;br&gt;Lab 2 due by 5:00 pm, June 14</td>
</tr>
<tr>
<td>June 19 &amp; 21, 2018</td>
<td>The Neuromuscular System and Exercise</td>
<td>Lab 3 Vital Signs (lab meets on campus on June 19 in CHP 143-as SPLIT labs)</td>
<td>MKK: Ch. 18,19</td>
<td>June 21 [ALL meet], CHP 143, 8:30 – 11:30 am&lt;br&gt;Quiz 2 on Thursday, June 21 at 11 am, Dr. Hung to proctor&lt;br&gt;Key Concepts, Hung (Chs. 18-19)</td>
</tr>
</tbody>
</table>
| June 26 & 28, 2018 | The Pulmonary System and Exercise                                              | June 26 [ALL meet], CHP 143, 8:30 – 11:30 am & checkoffs 1:30 – 4:30 pm<br>Key Concepts, Dr. Weise (Chs. 15-17) Vital Signs Checkoffs | MKK: Ch.12,13, 14<br>MKK: Ch.15,16, 17 | June 28 [ALL meet], 8:30 – 11:30 am, CHP 143 Key Concepts, Dr. Weise (Chs.15-17)-

Revised 04/01/2018
PT 7311 Clinical Exercise Physiology
<table>
<thead>
<tr>
<th>Week of</th>
<th>Lecture Content</th>
<th>Lab Content</th>
<th>Reading</th>
<th>Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 3, 2018</td>
<td>NO CLASS ON JULY 4</td>
<td>Afternoon of June 26 (TBA) Lab 3 Due@Chkoff</td>
<td></td>
<td></td>
</tr>
<tr>
<td>July 10 &amp; 12, 2018</td>
<td>The American College of Sports Medicine/Guidelines for Exercise Prescription and Testing</td>
<td>Lab 4 Submax Exercise Testing Lab meets on campus on July 10 in CHP 143 - SPLIT labs</td>
<td>ACSM Text Ch. 1-5, 7, 8 (9th edition) Article on Submax Testing Review of Case Study Assignment</td>
<td>July 3, 8:30 – 11:30 am Midterm Exam Science 213 (note change of room) Dr. Hung to Proctor</td>
</tr>
<tr>
<td>July 17 &amp; 19, 2018</td>
<td>Training the Anaerobic and Aerobic Energy Systems</td>
<td>Lab 5: Max Ex. Testing &amp; Ex. Prescription Labs SPLIT, July 17 CHP 143</td>
<td>MKK: Ch. 21</td>
<td>July 12 [ALL meet], 8:30 – 11:30 am, CHP 143 Key Concepts, Dr. Hung (Ch. 22) Quiz 3, 11 am, Dr. Hung to proctor</td>
</tr>
<tr>
<td>July 24 &amp; 26, 2018</td>
<td>Muscular Strength and Resistance</td>
<td>Lab 6a: Strength Training (Lab meets on July 24 in CHP 143—as SPLIT labs)</td>
<td>MKK: Ch. 28, 30</td>
<td>July 26, 8:30 – 11:30 am Key Concepts, Dr. Weise (Ch. 28) Lab 5 Due, Friday, July 27, 5 pm</td>
</tr>
<tr>
<td>July 31 &amp; August 2, 2018</td>
<td>Body Composition</td>
<td>Lab 6b: Body Composition (Lab meets July 31 in CHP 143—as SPLIT labs)</td>
<td>Clinical Case Studies Due Monday, July 30, 12 noon Lab 6 Due: 8/2/15, 12 noon</td>
<td>Final Exam, 8/2/18 8:30 – 11:30 am</td>
</tr>
</tbody>
</table>

**THE INSTRUCTOR RESERVES THE RIGHT TO MODIFY THE ABOVE SCHEDULE**

Revised 04/01/2018
PT 7311 Clinical Exercise Physiology