College of Charleston
PEHD 438: Advanced Topics in Resistance Training and Conditioning
Spring 2011

Instructor: Dr. Tim Scheett
Office: Silcox Rm 214
Office hours: W 10:00–12:00 PM; F 1:00–3:00 PM
OR email to schedule an individual appointment
Phone: (843) 953-6538 (office)
Email: ScheettT@cofc.edu

Course meeting: Lecture: T & TH 10:50 – 12:05
Rooms 111 & 215 (Silcox Gym)

Prerequisite courses: PEHD 340/Lab or permission of the instructor

Course Description: This course is designed to apply theoretical knowledge in the
areas of exercise science toward the development of an optimal resistance training and
conditioning program. Emphasis will be placed on achieving peak athletic performance
through a long term manipulation of the program design.

Course Texts:
- Earle, R.W., and T.R. Baechle, eds. NSCA’s Essentials of Personal Training. 3rd
- NSCA Certification Commission. Exercise Technique Manual for Resistance
  Training. 2nd Edition (with companion 2-DVD set). Human Kinetics: Champagne,
  IL. 2008. (Recommended)
  Champagne, IL. 2006. (Recommended)

Additional Helpful Resources:
- NSCA Certification Commission, www.nsca-cc.org

Student Learning Outcomes:
Upon successful completion of the course, the student will be able to:
1. Apply scientific knowledge to train athletes and clients for the primary goals of
   improving athletic performance and fitness.
2. Learn how to conduct sport-specific testing sessions.
3. Learn how to demonstrate and teach proper exercise techniques.
4. Learn how to design and implement safe and effective strength training and conditioning and personal training programs.
5. Learn how to provide guidance regarding nutrition and performance-enhancing substances.
6. Apply exercise prescription principles for training variation, injury prevention, and reconditioning.

Grade Distribution: 720 points total - There will be multiple assignments with various deadlines throughout the semester. See below for a description of the assignments. Due dates will be determined during the second class meeting of the semester.

Exams (150 points) – Students will take two written exams. Students will be exempt from the final exam if they schedule and TAKE the National Strength and Conditioning Association (NSCA) Certified Strength and Conditioning Specialists (CSCS) certification exam PRIOR TO April 27, 2011. Refer to the NSCA Certification Commission website for paper and pencil exam locations. Computer exam testing is available in Columbia, SC, Georgetown, SC, Spartanburg, SC, Savannah, GA, and Charlotte, NC as well as in numerous other cities in other states. Consult the NSCA Certification Commission website for specific days and times as well as to register for the certification exam: nsca-cc.org

Sport Analysis and Performance Training Assignment (150 points)
Part 1: Students will be required to attend a high school, collegiate or professional sport competition of their choice to analyze the specific sport performance components of the sport. Students will breakdown the sport based on the specific metabolic energy systems utilized (i.e. based on work:rest ratios) as well as the muscular (strength, power, speed, etc) and cardiorespiratory physiological aspects required by the sport of their choice. Students will provide a written analysis highlighting these physiological and metabolic aspects. In addition, the student should, if necessary, break the sport down by sub-areas (e.g. basketball: post players and guards; football: linemen and skill positions). Part 1 will be due March 22nd. Specific details will be discussed in class and a grading rubric will be posted on OAKS.

Part 2: Students will make edits to the Sports Analysis assignment based on feedback and the grading rubric. Students will then complete the Performance Training portion of the assignment using an outline format to list the most appropriate assessment tests, resistance training and conditioning training methods that can be used to train and develop the sport-specific metabolic and physiological aspects identified in the part 1 Sport Analysis. The Performance Training methods must be broken down into appropriate training seasons (preseason, in-season, and off-season). These sections will then be further subdivided into the following areas (a) selection of appropriate performance tests, (b) selection of appropriate resistance training methods and (c) selection of appropriate conditioning training methods that could be used to train and develop the various sport-specific metabolic and physiological aspects identified in the part 1 Sport Analysis. This project will aid the student in developing a resource portfolio of training methods and assessment tests that they can refer to in the future if they enter the Sport Performance profession. Part 2 will be due April 25th. Specific details will be discussed in class and a grading rubric will be posted on OAKS.

Facilitated Discussion (50 points) – students will work with a partner and choose a current training method topic from a list provided by the instructor. Student facilitators will lead the class
through a discussion of what the specific training method is, how and why it does or doesn’t work using evidence-based research that supports or refutes this type of training as being effective and appropriate. Students not facilitating the discussion will prepare and bring two questions on each topic that they prepared during their pre-class reading on the various topics. The style of questions should follow Bloom’s Taxonomy of higher ordered thinking and should focus on analysis, evaluation and synthesis of knowledge and cannot be simplistic rudimentary questions. Each student’s questions will be submitted and evaluated for higher order of thinking and will count for 50% of the student’s overall grade for this assignment. Guidelines for the facilitated discussions will be discussed in class and posted on OAKS.

**Oral Symposium Presentations (2 X 100 points each)** – Students will each work with a partner to prepare and present two oral symposium presentations from the topics listed below. No two symposiums will be on the same topic and each group must choose a different topic for each of their assignments for the entire class. The symposium should last a minimum of 45 min (this will be approximately 35-55 slides) followed by a 20 min question and answer period. The symposiums must be designed towards teaching a professional peer-group new information. The symposium presentations will include 1) a section outlining and discussing the physiological mechanisms; and 2) a section on the appropriate exercise training strategies including a sample 8 week exercise program. Each student will develop and present a physiological mechanism section for one of their topics and an appropriate exercise training strategies session for their other chosen topic. PDF files of all references must be submitted with electronic file of presentation to be posted on OAKS. Guidelines for the oral symposium presentations will be discussed in class and posted on OAKS.

**Multi-media “Webinar” Presentations (150 points)** – students may choose to work with 1-2 partners or alone. Students will use a combination of different media formats (audio, video, text, PowerPoint, etc) to write, edit, direct and produce three (3) multi-media presentations per group that are 3-4 minutes in length that either support or bust an exercise training myth or gadget with one topic per video. All topics will be supported or busted by using peer-reviewed published research. Topics could include myths such as needing to lift heavy weight to build muscle mass, incline press targets clavicular pecs, needing to stretch before exercising, not training when sore, 2 min rest periods between all sets, super slow reps, fast reps, lifting heavy weight to increase caloric expenditure, children that lift weights will stunt their growth, women that lift weights will grow big/bulky muscles, resistance training can build long lean muscle, etc. Topics could include gadgets such as the Perfect Push-up device, Perfect Pull-up device, increased core and/or peripheral muscle activation with instability training, wrist-wraps increasing muscular strength, the Shake Weight, a variety of core machines, etc. The goal for the videos is to educate and provide accurate information that has peer-reviewed science to support the facts. All references must be fully cited and included at the end of each video. If you are unsure if a specific topic is appropriate or not – clear the topic/idea with Dr. Scheett before you spend too much time planning the video. PDF files of all references must be submitted with electronic file of presentation to be posted on OAKS. Guidelines for the multi-media presentation will be discussed in class and posted on OAKS.

All assignments require a reference section. **All information must be from peer-reviewed professional journals.** All references must be alphabetized by surname of first author and numbered. References are cited in the text by numbers [e.g., (4,9)]. All references listed must be cited in the assignment and referred to by number therein. Below are several examples of references:
**Journal Article**

**Book**

**Chapter in an edited book**

**Software**

**Proceedings**

**Dissertation/Thesis**

No student will be allowed to use information gathered by another student for their own presentation (current or previous semester). Doing so will be deemed as a violation of the College of Charleston Honor Code.

**Grade Scale:**

Course letter grades will be determined on the basis of overall performance. Earned points will be divided by 700 total points and the following will be used to determine final grades:

- A      90 – 100  
- A-     88 – 89  
- B      80 – 84  
- B-     78 – 79  
- C      70 – 74  
- C-     68 – 69  
- D      64 – 65  
- D-     62 – 63  
- F      Below 62

**Attendance:**

While it is recognized that certain unforeseen events may prevent you from attending a certain class, due to the lecture and discussion nature of this class it is vital that you attend and participate. If you miss more than 25% of the class, you will be assigned a grade of WA. If extreme circumstances necessitate an absence, you will be held responsible for the class material covered during your absence. Excused absences will be considered for the following: serious illness, hospitalization, death of a family member or close friend, attendance at an event representing the College of Charleston. Appropriate documentation must be provided from the Undergraduate Dean’s Office for an absence to be considered excused. If a student has more than four unexcused absences that student may be removed from the class roster. In addition, promptness is required as being tardy will count as an unexcused absence.

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Class Participation: This class was specifically designed to provide you as many applied hands-on experiences as possible. Therefore, you are required to attend each application class (typically on Thursdays) while wearing appropriate clothing (i.e. exercise clothing with athletic shoes). Showing up for an application class without appropriate clothing will count the same as if you did not attend at all. See your instructor prior to the start of this course if you participate in an activity that may cause a problem with attendance (e.g. varsity sports) so proper arrangements can be made. If for personal or medical reasons several classes are missed, the instructor should be informed of the reason. Your full participation is expected and required (medical conditions will be accepted with proper notification).

Multi-media:

The use of any multi-media device during class is strictly prohibited!! It is recommended that you bring a stand alone calculator to regular class meetings as well as exams. If your cell phone rings you will be asked to leave class. If you have a dire family emergency where you are expecting a call during class – you will be expected to take the seat next to the door and quietly exit the class if your phone vibrates. The possession of any multi-media device during examination will automatically result in a zero for that exam.

Final grades will not be given out or posted at the end of the semester. You will have to wait until you can access your grades via Cougar Trail or when the University sends out the official grade records.

Honor System: Review the current Student Handbook: A Guide to Civil and Honorable Conduct, especially the section pertaining to the classroom code of conduct.

You are expected to do your own work in this course. If you are caught cheating or plagiarizing another individual's work you will be reported to the appropriate University office and you will receive an “F” for a grade in the course. You need to do any and all writing on your own and in your own words. Simply re-arranging a paragraph or changing one or two words of another individual's work is still considered plagiarism. The 1, 2, or 10 points you cheat for are not worth risking your ENTIRE academic career. DO NOT put me in a situation where I have to act accordingly.

General Notes:

- It is strongly recommended that you read “ahead” of the presentations in order to allow for a group discussion following the presentations. The pace of the lecture presentations is approximately 1 topic every week, however, some are quicker or longer than others. On a regular basis I will try to make you aware of where we are at in the course so that you can prepare accordingly. I strongly recommend that you read the text BEFORE and again after the lectures on that material.

- The large volume of material presented in this class will necessitate frequent and consistent study. What you do the first week is as important as what you do the last week. Don’t put off studying for quizzes and exams until the last minute. Quite simply – 20 min of studying EVERYDAY will prepare you to do well on the quizzes and thus the subsequent exams will not be as difficult to prepare for. Exams and quizzes will be demanding and difficult; you must be thoroughly familiar with the information to the point of being able to interpret and
apply it. This is an upper level class and I fully expect each of you to think about the basic information you already know, interpret it and apply it to various situations.

- If you miss a class when handouts are provided it is your responsibility to get a copy of the handouts from another student. You are also responsible for obtaining the missed notes from another student. **DO NOT COME TO THE PROFESSOR AND ASK FOR HANDOUTS AND/OR NOTES FOR THE LECTURE(S) YOU MISSED.**

- **If there is a student in this class who has a documented disability and has been approved to receive accommodations through SNAP Services, please feel free to come and discuss this with me during my office hours.**
  - Any student eligible for and needing academic adjustments or accommodations because of a disability is requested to speak with the professor in a timely manner so that your needs can be addressed.
  - The College will make reasonable accommodations for persons with documented disabilities. Students should apply for services at the Center for Disability Services located on the first floor of the Lightsey Center, Suite 104. Students approved for accommodations should notify their professors as quickly as possible.
  - This College abides by section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act that stipulates no student shall be denied access to an education “solely by reason of a handicap.” Disabilities covered by law include, but are not limited to, learning disabilities and hearing, sight or mobility impairments. If you have a documented disability that may have some impact on your work in this class and for which you may require accommodations, please see an administrator at the Center of Disability Services, (843) 953-1431 or me so that such accommodation may be arranged.
Tentative Schedule for class topics and assignments:

Week 1 (Jan 11 & 13)  Introduction, Pick Topics for Assignments
                      Dynamic Warm-up, Stretching, Body Weight Movements

Week 2 (Jan 18 & 20)  Facilitated Discussions
                      Technique for Lower Body Quadriceps Exercises

Week 3 (Jan 25 & 27)  Facilitated Discussions
                      Technique for Lower Body Glut/Ham Exercises

Week 4 (Feb 1 & 3)    Facilitated Discussions
                      Technique for Upper Body Extension Exercises (pushes)

Week 5 (Feb 8 & 10)   Oral Symposium
                      Technique for Upper Body Flexion Exercises (pulls)

Week 6 (Feb 15 & 17)  Oral Symposiums
                      Technique for Olympic/Power lifts

Week 7 (Feb 22 & 24)  Oral Symposiums
                      Technique for Olympic/Power lifts

Week 8 (March 1 & 3)  Oral Symposium
                      Technique for Olympic/Power lifts

Exam 1

Week 9 (March 15 & 17) Oral Symposiums
                          Technique for Agility and Quickness Exercises

Week 10 (March 22 & 24) Oral Symposiums
                          Technique for Plyometric Exercises

Week 11 (March 29 & 31) Oral Symposiums
                          Technique for Speed Development Exercises

Week 12 (April 5 & 7)  Oral Symposiums
                          Technique for Bands, Chains and Instability Devices

Week 13 (April 12 & 14) Oral Symposiums
                         Oral Symposiums

Week 14 (April 19 & 21) Oral Symposiums
                         Oral Symposiums or Multi-media videos

Final Exam: Saturday, April 30th @ 8:00 am

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Assignment Topics:

Facilitated Discussions – choose 1 with a partner
1. Boot Camp
2. CrossFit
3. High Intensity Training (1 set to failure)
4. Kettle Bells
5. Instability Training
6. Muscle Confusion
7. P90X
8. Ropes
9. Speed Reps
10. Super Slow Reps
11. TRX
12. Undulating Training

Oral Symposiums – choose 2 with a partner
1. Development of Aerobic Conditioning (HIIT, LSD, etc)
2. Development of Agility and Balance
3. Etiology and Treatment of DOMS
4. Development of Hypertrophy
5. Instability and Unstable Training
6. Overreaching and Overtraining Syndrome
7. Plyometric Training
8. Position Stands on Resistance Training
9. Development of Muscular Power
10. Development of Speed and Quickness
11. Development of Muscular Strength
12. Warm-up, cool-down, stretching (dynamic, static, ballistic)

If there is a topic you would like to cover that is not on the list you may propose the topic to Dr. Scheett for approval.
My Assignments

No duplication of topics will be allowed by a single student for any assignments. No duplication of topics will be allowed for either oral symposium or the multimedia projects. Topics will be assigned by the end of the first day of class. Switching of topics between students is allowed with prior permission of instructor.

Rules Assignment (20 points) ______________________

Sport Analysis (75 points) ______________________

Assessment and Training Methods (75 points) ______________________

Facilitated Discussion (50 points) ______________________

Oral Symposium Physiological Mechanism (100 points) ______________________

Oral Symposium Exercise Training Strategies (100 points) ______________________

Multi-media “Webinar” Presentation (150 points) ______________________

Exam 1 (50 points) ______________________

Final Exam (100 points) ______________________