SUNY CORTLAND  
Physiological Principles of Conditioning for Sports  
EXS 558 Course Syllabus

Location: On-line (June 4-July 23)  
On-campus (July 12-20) Park Center E-201 (MTFM) and C315 (Tues, 7-20)  
Semester: Summer 2010  
Credit Hours: 3  
Instructor: Philip J. Buckenmeyer, Ph.D.  
Office Location: Cornish D 132  
Office Phone: 607-753-5558  
Office Hours: On-line

REQUIRED TEXTBOOK  

COURSE DESCRIPTION  
This course is designed to apply physiological principles to development of specific conditioning components in sports. Analysis of research implications and critical evaluation of current practices will be emphasized. Material covered in this course will be helpful in preparing individuals to take the National Certified Strength and Conditioning examination.

COURSE OBJECTIVES  
1. Develop a functional understanding of strength and conditioning as relates to athletics, as well as athletic training.  
2. Learn and understand the concepts and applications of the exercise sciences based upon current research.  
3. Learn the common exercises identified by the NSCA and the proper lifting and spotting techniques for those exercises.  
4. Learn the components of a strength and conditioning program and be able to develop and design an effective program.  
5. Learn how to effectively utilize Dartfish software to evaluate power lifting  
6. Develop an understanding of the strength and conditioning professional’s role in the strength and conditioning field.

ATTENDANCE  
Since this is an on-line course between June 4-July 23, no attendance will be taken. However, it is up to the student to meet the course deadlines for turning in course assignments, projects, and exams. If course assignments are not completed by their required dates, points will be deducted for the assignment. On designated dates (July 12, 13, 16, class will be from 3-5 p.m. in Park Center E201; July 19, class will be from 9-11:30 a.m. and 1:30-4 p.m. in Park Center E201; and July 20th, class will be in C315 from 9 a.m. to noon; on-campus attendance is required.

METHOD OF EVALUATION  
1. Discussion Questions (15% of grade)  
2. 2 Projects (each worth 20% = 40% of grade)  
3. 5 quizzes (each worth 5% = 25% of grade)  
3. 1 Final Exam (worth 20% of grade)

Projects: You will be doing two projects during the semester. Listed below is an overview of the projects you will be doing. Each project will be described in more detail later in the syllabus.

Project 1: Design a 52-week Resistance & Conditioning Program for a particular sport  
Project 2: Film and analyze the hang clean and the back squat utilizing Dartfish software
**GRADING SCALE**

- 100-94 A
- 93-90 A-
- 89-87 B+
- 86-84 B
- 83-80 B-
- 79-77 C+
- 76-74 C
- 73-70 C-
- 69-67 D+
- 66-64 D
- 63-60 D-
- 0-59 E

Note: Students are responsible for completing assignments, projects, and exams on time.

**Course Attendance Policy:** As an on-line course, students are expected to meet the deadlines of assignments (i.e. discussion questions), projects, and exams on time. Group “captains” will be responsible for submitting answers to group discussion questions on the designated due dates. Students are responsible for knowing the policy on class attendance as outlined in the College Catalog.

**Academic Dishonesty Policy:** Students are responsible for knowing the policy on academic dishonesty as outlined in the College Handbook. Each student is expected to present his/her own work. All papers, examinations and other assignments must be original or explicit acknowledgement must be given for the use of other persons' ideas or language. Examples of plagiarism include failure to use quotation marks, failure to document ideas, or false documentation. Students are expected to do their own work on all examinations. Copying work or permitting another student to copy one's work is academic dishonesty.

**Student Disability Policy:** SUNY Cortland is committed to upholding and maintaining all aspects of the federal Americans with Disabilities Act of 1990 (ADA) and Section 504 of the Rehabilitation Act of 1973. If you are a student with a disability and wish to request accommodations, please contact the Office of Disability Services located in A-11 and A-12 Van Hoesen Hall or call 607-753-2066 for an appointment. Any information regarding your disability will remain confidential. Because many accommodations require early planning, requests for accommodations should be made as early as possible. Any requests for accommodations will be reviewed in a timely manner to determine their appropriateness to this setting.

**Academic Support and Achievement Program (ASAP):** The mission of the ASAP is to assist students in developing the skills and strategies to become confident, independent, and active learners. ASAP helps students learn how they learn best. The program provides assistance in reading, writing, and study skills to students of all ability and achievement levels. Students can participate in individual or small group session, workshops, and classroom instruction. Students who have regularly attended ASAP have developed increased confidence in their abilities, have acquired independent learning skills, and have shown marked improvement in their grade point averages. Students interested in taking advantage of the services offered by ASAP should contact this office at 753-4309. The ASAP office is located in the first floor of the library.
**On-line Schedule and Tasks for EXS 558**

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Class Topic</th>
<th>Chapter</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 4</td>
<td>F</td>
<td>Introduction: Review items on syllabus and re-introduce yourselves to members of your cohort group&lt;br&gt;- Discuss course-related events of past year within your cohort subgroup; your cohort subgroup is noted under learning module&lt;br&gt;- Provide a synopsis of your group’s relevant events to instructor via email; note your subgroup number</td>
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**Discussions Module – Review of Basic Physiological Concepts**

**June 7 through June 11**  [Section 1]

Read Structure/Function of Muscle, Neuromuscular, Cardiovascular, Respiratory Systems  
- Consult powerpoint for this chapter for primary information for exam preparation
- Discuss the noted question in the discussion section among your subgroup and designate a captain to submit group’s answer to the Assignment drop box by June 11, midnight

Read Biomechanics of Resistance Training Chapter  
- Consult powerpoint for this chapter for primary information for exam preparation
- Discuss the noted question in the discussion section among your subgroup and designate a captain to submit group’s answer to the Assignment drop box by June 11, midnight

Read Resistance Training and Spotting Techniques Chapter  
- Consult powerpoint for this chapter for primary information for exam preparation
- Access [http://www.nsca-lift.org/videos/displayvideos.asp](http://www.nsca-lift.org/videos/displayvideos.asp) and practice the five lifting movements (Clean, Overhead Squat, Power Snatch, Romanian Deadlift, and Push Press) based upon visual observation and reading respective progressions in the Chapter.<br>- Analyze your lifting technique using the video clips and text information as your points of reference. Submit your own analysis of your lifting techniques by June 11, midnight, in the Discussion area.

**All Assignments and Discussions for this Section due by June 11th, midnight**

**On-line Quiz #1**  On June 11th between 6 a.m.-midnight, you will have a 15-minute time frame to take a 10-question multiple-choice quiz on Chapters 1, 4, 14

**June 14 through June 18**  [Section 2]

Read Bioenergetics of Exercise & Training Chapter  
- Consult powerpoint for this chapter for primary information for exam preparation
- Discuss the noted question in the discussion section among your subgroup and designate a captain to submit group’s answer to the Assignment drop box by June 18, midnight

Read Endocrine Responses to Resistance Training Chapter  
- Consult powerpoint for this chapter for primary information for exam preparation
- Discuss the noted question in the discussion section among your subgroup and designate a captain to submit group’s answer to the Assignment drop box by June 18, midnight

Read Age- and Sex-Related Differences and Implications for Resistance Exercise Chapter  
- Consult powerpoint for this chapter for primary information for exam preparation
- Discuss the noted question in the discussion section among your subgroup and designate a captain to submit group’s answer to the Assignment drop box by June 18, midnight
All Assignments and Discussions for this Section due by June 18th midnight

On-line Quiz #2  On June 18th between 6 a.m.-midnight, you will have a 15-minute time frame to take a 10-question multiple-choice quiz on Chapters 2,3,7

June 21 through June 25  [Section 3]

Read Physiological Adaptations to Anaerobic & Aerobic Endurance Training Programs Chapters 5,6  93-118,121-139
- Consult powerpoints for these chapters for primary information for exam preparation
- Within your subgroup, discuss following article and report purpose, brief methods, most important results, relationship of results to the literature, and conclusions (Metabolic Effects of the Addition of Resistive to Aerobic Exercise in Older Men) and designate a captain to submit group’s answer to the Assignment drop box by June 25, midnight
http://web.ebscohost.com/ehost/detail?vid=5&hid=104&sid=b45715d9-4012-4306-bfa5-45b0387db1e6%40sessionmgr102

Read Warm-up and Stretching Chapter 13  295-324
- Consult powerpoint for this chapter for primary information for exam preparation
- Within your subgroup, discuss following article and report purpose, brief methods, most important results, relationship of results to the literature, and conclusions (Dynamic Warm-Up Protocols, With and Without a Weighted Vest, and Fitness Performance in High School Female Athletes) and designate captain to submit group’s answer to the Assignment drop box by June 25, midnight
http://web.ebscohost.com/ehost/pdf?vid=3&hid=117&sid=34f3bab4-148a-4d80-ac37-863996bc814a%40sessionmgr104

Read Speed, Agility, & Speed-Endurance Development Chapter 17  457-484
- Consult powerpoint for this chapter for primary information for exam preparation
- Discuss following article and report purpose, brief methods, most important results, relationship of results to the literature, and conclusions (The Effect of a Combined High-Intensity Strength and Speed Training Program on the Running and Jumping Ability of Soccer Players) and designate captain to submit group’s answer to the Assignment drop box by June 25, midnight
http://web.ebscohost.com/ehost/pdf?vid=6&hid=117&sid=34f3bab4-148a-4d80-ac37-863996bc814a%40sessionmgr104

All Assignments and Discussions for this Section due by June 25th midnight

On-line Quiz #3  On June 25th between 6 a.m.-midnight, you will have a 15-minute time frame to take a 10-question multiple-choice quiz on Chapters 5,6,13,17

June 28 through July 2  [Section 4]

Read Nutritional Factors in Health and Performance Chapter 10  201-232
- Consult powerpoint for this chapter for primary information for exam preparation
- Discuss following article and report purpose, brief methods, most important results, relationship of results to the literature, and conclusions (Thermic and Glycemic Responses to Bread and Pasta Meals with and without Prior Low-Intensity Exercise) and designate captain to submit group’s answer to the Assignment drop box by July 2, midnight
http://web.ebscohost.com/ehost/pdf?vid=5&hid=117&sid=34f3bab4-148a-4d80-ac37-863996bc814a%40sessionmgr104

Read Psychology of Athletic Preparation and Performance Chapter 8  159-177
- Consult powerpoint for this chapter for primary information for exam preparation
- Discuss following article and report purpose, brief methods, most important results, relationship of results to the literature, and conclusions (The Prevalence of Disorder Eating, Menstrual Dysfunction, and Low Bone Mineral Density Among U.S. Collegiate Athletes) and designate captain to submit group’s answer to the Assignment drop box by July 2, midnight
http://web.ebscohost.com/ehost/pdf?vid=5&hid=117&sid=34f3bab4-148a-4d80-ac37-863996bc814a%40sessionmgr104
Read Performance-Enhancing Substances Chapter 9 179-200
- Consult powerpoint for this chapter for primary information for exam preparation
- Discuss following article and report purpose, brief methods, most important results, relationship of results to the literature, and conclusions (A Preliminary Investigation into the Relationship between Anabolic-Androgenic Steroids Use and the Symptoms of Reverse Anorexia in Both Current and Ex-Users) and designate captain to submit group’s answer to the Assignment drop box by July 2, midnight
http://web.ebscohost.com/ehost/pdf?vid=5&hid=17&sid=34f3bab4-148a-4d80-ac37-863996bc814a%40sessionmgr104

All Assignments and Discussions for this Section due by July 2nd midnight

On-line Quiz #4 On July 2nd between 6 a.m.-midnight, you will have a 15-minute time frame to take a 10-question multiple-choice quiz on Chapters 8,9,10

<table>
<thead>
<tr>
<th>July 5 through July 9</th>
<th>[Section 5]</th>
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<tbody>
<tr>
<td>Read Principles of Test Selection and Administration 11 237-246</td>
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<tr>
<td>- Consult powerpoint for this chapter for primary information for exam preparation</td>
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<tr>
<td>- Discuss the noted question in the discussion section among your subgroup and designate a captain to submit group’s answer to the Assignment drop box by July 9, midnight</td>
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<tr>
<td>Read Resistance Training Chapter 15 381-411</td>
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<tr>
<td>- Consult powerpoint for this chapter for primary information for exam preparation</td>
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<tr>
<td>- Project assignment (noted in Projects Module) associated with this chapter</td>
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<tr>
<td>Read Plyometrics Training Chapter 16 413-456</td>
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<tr>
<td>- Consult powerpoint for this chapter for primary information for exam preparation</td>
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<tr>
<td>- Discuss the noted question in the discussion section among your subgroup and designate a captain to submit group’s answer to the Assignment drop box by July 9, midnight</td>
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<tr>
<td>Read Aerobic Endurance Exercise Training Chapter 18 489-503</td>
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<tr>
<td>- Consult powerpoint for this chapter for primary information for exam preparation</td>
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<tr>
<td>- Discuss the noted question in the discussion section among your subgroup and designate a captain to submit group’s answer to the Assignment drop box by July 9, midnight</td>
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<tr>
<td>Read Periodization Chapter 19 507-522</td>
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<tr>
<td>- Consult powerpoint for this chapter for primary information for exam preparation</td>
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<tr>
<td>- Project assignment (noted in Projects Module) associated with this chapter</td>
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All Discussion Assignments for this Section due by July 9th midnight

On-line Quiz #5 On July 9th between 6 a.m.-midnight, you will have a 15-minute time frame to take a 10-question multiple-choice quiz on Chapters 11,15,16,18,19

<table>
<thead>
<tr>
<th>July 16</th>
<th>Final Exam</th>
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<tr>
<td>- Exam will be 50 multiple choice questions from all chapter information noted in powerpoints and general information from the 6 research articles assigned.</td>
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<td>- Exam will have a 2-hour time limit and must be taken on this day between 6 a.m. and midnight.</td>
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Projects Module

July 9th through July 23rd

Project 1- Design a calendar-year strength and conditioning program
(See instructions in Discussion area)
- Due date for this project is July 23rd; email as attachment to phil.buckenmeyer@cortland.edu
July 12th through July 16th

Project 2: Film, analyze, and create a media workbook utilizing the Dartfish software while on campus
- Dr. Bauer will instruct you during this time frame on putting together a media book on the following two power lifts:
  1) Hang Clean and 2) Back Squat Power Lifts (see instructions on analysis in Discussion area)
- Due date for this project is July 16th when we meet on campus