

TACTICAL STRENGTH AND CONDITIONING

PET5936 ~ 3 CREDITS ~ SUMMER 2021

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OFFICE HOURS: Virtual Office Hours utilizing Zoom are available by
appointment

MEETING TIME/LOCATION: CANVAS platform

COURSE DESCRIPTION: Examines fundamental concepts in bioenergetics, biomechanics, cardiopulmonary responses, and skeletal muscle function & adaptation. Includes evidence-based program design and practical skills necessary for success in fire and rescue, law enforcement, and military careers. Content will prepare students to sit for the NSCA Tactical Strength and Conditioning Facilitator certification.

PREREQUISITE KNOWLEDGE AND SKILLS: None

REQUIRED MATERIALS:

Textbook: NSCA's Essentials of Tactical Strength and Conditioning. Alavar, B.A., K. Sell, P.A. Deuster, Eds. Human Kinetics, 2017. ISBN: 978-1-4504-5730-9 (e-book version also available)

The following research articles are provided to the student within the Canvas course page:

1. Scofield, D. E., & Kardouni, J. R. (2015). The tactical athlete: a product of 21st century strength and conditioning. *Strength & Conditioning Journal*, 37(4), 2-7.

2. Allen, K., Metoyer, C., Flatt, A., Bishop, P., & Esco, M. (2016). The relationship between HRV and Army Physical Fitness Test scores in ROTC cadets. *The Journal of Strength and Conditioning Research*, 30, 122
3. Cocke, C., & Orr, R. M. (2015). The impact of physical training programs on the fitness of tactical populations: A critical review. *Journal of Australian Strength and Conditioning*, 23(1), 39-46.
4. Maupin, D., Schram, B., & Orr, R. (2019). Tracking Training Load and Its Implementation in Tactical Populations: A Narrative Review. *Strength & Conditioning Journal*, 41(6), 1-11
5. Crawley, A. A., Sherman, R. A., Crawley, W. R., & Cosio-Lima, L. M. (2016). Physical fitness of police academy cadets: Baseline characteristics and changes during a 16-week academy. *Journal of strength and conditioning research*, 30(5), 1416.
6. Peterson, M. D., Dodd, D. J., Alvar, B. A., Rhea, M. R., & Favre, M. (2008). Undulation training for development of hierarchical fitness and improved firefighter job performance. *The Journal of Strength & Conditioning Research*, 22(5), 1683-1695.
7. ORR, R. M., Dawes, J. J., Lockie, R. G., & GODEASSI, D. P. (2019). The Relationship Between Lower-Body Strength and Power, and Load Carriage Tasks: A Critical Review. *International journal of exercise science*, 12(6), 1001
8. Pawlak, R., Clasey, J. L., Palmer, T., Symons, T. B., & Abel, M. G. (2015). The effect of a novel tactical training program on physical fitness and occupational performance in firefighters. *The Journal of Strength & Conditioning Research*, 29(3), 578-588.
9. Marins, E. F., David, G. B., & Del Vecchio, F. B. (2019). Characterization of the physical fitness of police officers: a systematic review. *The Journal of Strength & Conditioning Research*, 33(10), 2860-2874.
10. Barringer, N. D., McKinnon, C. J., O'Brien, N. C., & Kardouni, J. R. (2019). Relationship of strength and conditioning metrics to success on the army ranger physical assessment test. *The Journal of Strength & Conditioning Research*, 33(4), 958-964.
11. Jones, B. H., & Hauschild, V. D. (2015). Physical training, fitness, and injuries: lessons learned from military studies. *The Journal of Strength & Conditioning Research*, 29, S57-S64.
12. Bycura, D. K., Dmitrieva, N. O., Santos, A. C., Waugh, K. L., & Ritchey, K. M. (2019). Efficacy of a Goal Setting and Implementation Planning Intervention on

Firefighters' Cardiorespiratory Fitness. *The Journal of Strength & Conditioning Research*, 33(11), 3151-3161.

COURSE FORMAT: Students access and complete course assignments through the PET5936 Canvas page. Course topics are organized into weekly learning modules. Each module includes 3 practice activities corresponding with the module's learning materials (i.e. textbook reading, research articles, and associated lecture videos) as well as a graded module quiz. A midterm exam and final exam are included in addition to the module assignments. Students will have access to all learning modules and assignments from the first day of the course. Students may work at their own pace but must progress according to the course schedule of topics.

COURSE LEARNING OBJECTIVES: By the end of this course students will be able to:

1. Summarize and explain general concepts related to tactical strength and conditioning
2. Explain the acute responses and chronic adaptations of the cardiopulmonary and endocrine systems to exercise and high-stress situations
3. Apply kinesiological and biomechanical principles to exercise selection and tactical job performance
4. Analyze the training variables that can affect performance outcomes as they relate to physiological adaptations from aerobic and anaerobic training
5. Describe nutritional strategies to optimize body-composition and maximize performance and recovery
6. Express the unique nutritional needs of tactical athletes
7. Distinguish the risks and benefits of using dietary supplements in tactical athletes
8. Evaluate results of properly administered performance tests in tactical athletes
9. Design exercise programs including modalities such as resistance, mobility, power, speed, agility, and aerobic endurance using a periodization model
10. Identify common acute and chronic injuries and risk factors for injury in different tactical populations
11. Differentiate the unique physiological and biomechanical occupational demands of law enforcement, fire/rescue, and military professionals
12. Identify wellness strategies and interventions to decrease the risk and consequences of illness and disease
13. Give examples of strategies to create a safe training environment and reduce litigation

COURSE AND UNIVERSITY POLICIES:

ATTENDANCE POLICY:

Active participation in the course is mandatory. Points assigned to the chapter questions, Research Article questions, YellowDig message board posts, and Weekly research article synopses are all counted as participation points. The accumulation of participation points over the semester designates the participation grade. Late submissions of weekly participation assignments will not be accepted and a grade of 0 will be given for the assignment.

PERSONAL CONDUCT POLICY:

Students are expected to review and adhere to the UF Netiquette guide for online courses

<http://teach.ufl.edu/wp-content/uploads/2012/08/NetiquetteGuideforOnlineCourses.pdf>

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment."

The Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions.

Furthermore, you are obliged to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult the instructor or TA in this class.

EXAM MAKE-UP POLICY:

Exams may NOT be submitted late. Students will have access to exams for one week prior to the due date.

ACCOMMODATING STUDENTS WITH DISABILITIES:

Students requesting accommodation for disabilities must first register with the Dean of Students Office (<http://www.dso.ufl.edu/drc/>). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

COURSE EVALUATIONS:

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://gatorevals.aa.ufl.edu/>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://gatorevals.aa.ufl.edu/>.

GETTING HELP:

Health and Wellness

- U Matter, We Care: If you or a friend is in distress, please contact umatter@ufl.edu or 352 392-1575
- Counseling and Wellness Center: <https://counseling.ufl.edu/>, 352-392-1575
- Sexual Assault Recovery Services (SARS) - Student Health Care Center, 392-1161
- University Police Department, 392-1111 (or 9-1-1 for emergencies)
<http://www.police.ufl.edu/>

Academic Resources

- E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. <https://lss.at.ufl.edu/help.shtml>
- Career Connections Center, Reitz Union, 392-1601. Career assistance and counseling. <https://career.ufl.edu/>
- Library Support, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.
- Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. <http://teachingcenter.ufl.edu/>
- Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. <http://writing.ufl.edu/writing-studio/>
- Student Complaints On-Campus: <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/> On-Line Students Complaints: <http://distance.ufl.edu/student-complaint-process/>

GRADING SCALE: All course assignments are administered and graded within the APK6167 Canvas course page, so students will have access to all grades as they submit assignments. Any assignment that requires the instructor to manually grade some aspect of it will be graded within one week of its due date, including the semester exams and final project. Final Grades will be rounded up at .5 and above. The table below provides a reference. More detailed information regarding current UF grading policies can be found here: <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>. Any requests for additional extra credit or special exceptions to these grading policies will be interpreted as an honor code violation (i.e. asking for preferential treatment) and will be handled accordingly.

GRADING:

Evaluation Components	Points Per Component	Weighted % of Total Grade
Module Quizzes	110 points	20%
Yellowdig Participation	100 points	10%
Article Synopses (x4)	40 points	10%
Program Design Assignments	110 points	10%
Midterm Exam	50 points	20%
Cumulative Final Exam	50 points	30%

Module Quizzes - Each learning module contains a graded quiz consisting of 10 objective questions related to all components of the module. Quiz questions will be randomly selected from a test bank. Quizzes are not timed; however, the Honorlock proctoring service is required to complete each quiz. Honorlock is included on the e-Learning platform and no additional downloads are required. All quizzes are available from the first day of classes, but each module has a due date corresponding to the end of the week of the module according to the course schedule. Specifically, quizzes are due by Monday at 2:59am EST (Sunday at 11:59pm PST) each week.

Yellowdig Participation - This course incorporates an application called Yellowdig that provides a social media-like discussion board providing opportunities for engagement and discussion between classmates and the instructor. Points are earned for each interaction a student has with the Yellowdig platform. Students have the ability to earn a maximum total of 1,200 points each week in Yellowdig and the app sums the weekly totals throughout the semester to create a cumulative final point total. Students earning totals of 12,000 points or higher in Yellowdig by Friday, August 6 will earn a score of "100" for the Yellowdig Participation assignment on Canvas. The percentage of total points out of 12,000 will be used as the grade for the Yellowdig Participation Assignment on Canvas for students earning less than 12,000 total points. Yellowdig is included within e-Learning, no additional downloads are required.

Article Synopses - Students are expected to post a minimum of 4 research article synopses to the Yellowdig discussion board by Friday, August 6th at 11:59pm EST. Each article synopsis requires students to search a relevant database of research journals (i.e. Google Scholar, SportDiscus, PubMed) to find a peer-reviewed research article related to one of the course topics. Students should read the selected articles in their entirety and then post a brief synopsis of the article(s) to Yellowdig and to the corresponding assignment in e-Learning. The synopsis should be written and should include the following headers: 1. Reason for Selection 2. Research Problem 3. Methods 4. Results/ Conclusions 5. Takeaways. Students should briefly summarize why they selected the article, what research problem was addressed in the article, how the experiment was conducted, the most important results and explanations for the results provided by the authors of the study, and what information from the article can be used by classmates in their strength and conditioning decision making processes. A pdf copy of the article should be uploaded to both the Yellowdig post and e-Learning assignment. The same written synopsis can be submitted to both Yellowdig and e-Learning.

Program Design Assignments – Students will complete weekly assignments involving the application of program design principles using that week’s topic. Instructions for completing each week’s assignment are provided on Canvas. Many, though not all, of these assignments will provide the student an opportunity to build an evidence-based strength and conditioning program for a tactical population of their choice to use as a template in their careers. The remaining assignments require students to analyze a tactical population different from the one they selected. Each assignment is worth 10 points. Assignment submission and Peer Review feedback via a provided rubric are necessary to receive a grade of "complete" for each program design assignment.

Midterm Exam – The midterm exam consists of 50 objective questions (multiple choice, matching, true/false) worth 1 point each. Questions will require the application of course material or knowledge of basic scientific principles covered within each of the first 7 learning modules. Exam questions are generated by the course instructor and are randomly selected from a test bank. Students should prepare for the exam by completing all weekly course readings, practice activities, and module quizzes prior to the exam. The exam is not timed; however, the Honorlock proctoring service is required to complete it. Honorlock is included on the e-Learning platform and no additional downloads are required. Two attempts are allowed on the exam and the highest earned score will count towards the final grade. Students will be unable to view their questions nor answers between attempts. The exam will be available for one week following Module 6 in the course schedule and is due Monday, June 28 at 2:59am EST (Sunday, June 27 at 11:59pm PST)

Cumulative Final Exam - The cumulative final exam will consist of 100 objective questions (multiple choice, matching, true/false) worth 0.5 point each. Questions will require the application of course material or knowledge of basic scientific principles covered within each of the 12 learning modules. Exam questions are generated by the course instructor and are randomly selected from a test bank. Students should prepare for the exam by completing all weekly course readings, practice activities, and module quizzes prior to the exam. The exam is not timed; however, the Honorlock proctoring service is required to complete it. Honorlock is included on the e-Learning platform and no additional downloads are required. Two attempts are allowed on the exam and the highest earned score will count towards the final grade. Students will be unable to view their questions nor answers between attempts. The exam will be available for one week following Module 11 in the course schedule and is due Saturday, August 7 at 2:59am EST (Friday, August 6 at 11:59pm PST)

Module Activities - Four ungraded practice assignments are available in each of the 12 learning modules. Links to the practice assignments are under the "Activities" header on the module learning page. The practice assignments correspond to the learning material in the module. They may be completed an unlimited number of times, Honorlock is not required, and questions and answers are viewable between attempts. All practice assignments are available from the first day of the course and there are no due dates. These are optional assignments designed to help students gauge their comprehension and application of course learning material.

Letter Grade	Percent of Total Points Associated with Each Letter Grade	GPA Impact of Each Letter Grade
A	92.5-100%	4.0
A-	89.5 – 92.49%	3.7
B+	86.50-89.49%	3.33
B	79.50-86.49%	3.0
C+	76.50-79.49%	2.33
C	69.50-76.49%	2.0
D+	66.50-69.49%	1.33
D	59.50-66.49%	1.0
E	0-59.49%	0

WEEKLY COURSE SCHEDULE:

Week	Dates	Topic	Chapter
1	(5/10 – 5/14)	Overview of Tactical Strength and Conditioning Cardiopulmonary and Endocrine Responses and Adaptations to Exercise	1 2
2	(5/17 – 5/21)	Skeletal Muscle Anatomy and Biomechanics Bioenergetics	3 4
3	(5/24 – 5/28)	Testing and Evaluation of Tactical Populations Flexibility and Mobility Exercise	8 12
4	(5/31 – 6/4)	Development of Resistance Training Programs Resistance Training Exercise Techniques	9 11
5	(6/7 – 6/11)	Strength and Power Training to Improve Performance Plyometric, Speed, and Agility Exercise Technique and Programming	15 13
6	(6/14 – 6/18)	Periodization for Tactical Populations	10
7	(6/21 – 6/25)	Midterm Exam Available 6/19, Due 6/28 at 2:59am EST	
8	(6/28 – 7/2)	Aerobic Endurance Exercise Technique and Programming Physical Training to Optimize Load Carriage	14 20
9	(7/5 – 7/9)	Physiological Issues Related to Fire and Rescue Personnel Basic Nutrition for Tactical Populations	17 5
10	(7/12 – 7/16)	Physiological Issues Related to Law Enforcement Personnel Tactical Fueling	18 6
11	(7/19 – 7/23)	Physiological Issues Related to Military Personnel Ergogenic Aids	19 7
12	(7/26 – 7/30)	Care and Rehabilitation of Injured Tactical Populations Wellness Interventions in Tactical Populations	16 21
13	(8/2 – 8/6)	Organization and Administration Considerations	22

Final Exam: Available from Saturday, July 31 at 12:00am EST through Saturday, August 7 at 2:59am EST (Friday, August 6 at 11:59pm)

SUCCESS AND STUDY TIPS:

- Utilize the module practice assignments as study tools. You may complete them as many times as you like. Complete the assignments while you are working through the module and then again when you are reviewing for the exams.
- Read textbook chapters, canvas readings, and research articles carefully.
- Twenty percent of the final grade comes from participation activities including posting comments to the Yellowdig board and submitting the research article synopses. Take advantage of these assignments to bring up any quiz or exam grades in which you are disappointed.