

TACTICAL STRENGTH AND CONDITIONING

APK6611 ~ 3 CREDITS ~ SUMMER 2022

INSTRUCTOR: Blain Harrison, Ph.D, ATC, CSCS
Office: 106B FLG
Office Phone: 352-294-1704
Email: blainharrison@ufl.edu Preferred Method of Contact: email

OFFICE HOURS: Office Hours are by appointment on [zoom](#). You can schedule an appointment with me [here](#).

ACCESS: Access course through Canvas on **UF e-Learning** (<https://elearning.ufl.edu/>) & the **Canvas** mobile app by **Instructure**. This is a fully online course, so there are no in-person meetings. Lectures are pre-recorded so that you may watch them on-demand; please refer to the “Course Schedule” below for the suggested timeline to follow.

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 coursepage:

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 APK6611 Canvas page. Course topics are organized into weekly learning modules. Each module includes ~4 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 and additional graded assignments. 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 and assignment due dates.

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. Evaluate results of properly administered performance tests in tactical athletes
6. Design exercise programs including modalities such as resistance, mobility, power, speed, agility, and aerobic endurance using a periodization model
7. Describe nutritional strategies to optimize body-composition and maximize performance and recovery
8. Express the unique nutritional needs of tactical athletes
9. Distinguish the risks and benefits of using dietary supplements in tactical athletes
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. Students are permitted unlimited attempts on module practice assignments so that they may review any missed questions or prepare for quizzes and exams. Interaction with the course online Yellowdig discussion board is part of the final grade in the course.

PERSONAL CONDUCT POLICY:

Students are expected to review and adhere to the [UF Netiquette](#) guide for online courses. 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](#) 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.

EXAM MAKE-UP POLICY:

Unless excused based on University policies

(<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>), missed examinations and non-submitted or late assignments will be not be evaluated and will be assigned a grade of 0.

Obtaining approval for make-up exams or make-up assignments is the responsibility of the student. Students with medically or emergency related circumstances should utilize the UF Care Team's Contact My Instructor service (<https://care.dso.ufl.edu/instructor-notifications/>) provided by the UF Dean of Students Office.

Any non-medical or emergency related circumstances require students to submit a written request explaining why an exception is being requested. The written request must include official documentation that provides proof that the missed coursework was due to acceptable reasons outlined by University policy.

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 professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

PRIVACY: Students enrolled in this course are agreeing to have their video or audio content accessible to the members of this course, enrolled in this semester.

Per the State of Florida's House Bill 233, students are also permitted to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A "class lecture" is defined as an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To "publish" means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

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/>

IDEA Statement: The instructor strives to create an accessible and inclusive environment that is equal for all students regardless of race, gender, ethnicity, or ability. Derogatory, rude, or hurtful interactions with classmates or the instructor are not tolerated. Questions or concerns related to this statement are welcomed by the instructor or may be addressed to members of the APK IDEA Committee: Dr. Josie Ahlgren (jahlgren@ufl.edu), Dr. Linda Nguyen (linda.nguyen@ufl.edu) or Dr. Leo Ferreira (ferreira@ufl.edu).

GRADING POLICY:

GRADING SCALE: All course assignments are administered and graded within the APK6611 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. 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.

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+	86.5-89.49%	3.33
B	82.5-86.49%	3.0
B-	79.5 – 82.49	2.7
C+	76.5-79.49%	2.33
C	72.5-76.49%	2.0
C-	69.5 – 72.49	1.7
D+	66.5-69.49%	1.33
D	62.5-66.49%	1.0
D-	59.5 – 62.49	0.7
E	0-59.49%	0

Evaluation Components	Course Objectives Met	Points Per Component	Weighted % of Total Grade
Module Quizzes	1-13	186 points	20%
Yellowdig Participation	1-13	100 points	10%
Applied Assignments	9	100 points	10%
Article Synopses (x4)	1-13	40 points	10%
Midterm Exam	1-6	100 points	20%
Cumulative Final Exam	1-13	100 points	30%

Module Quizzes - Each learning module contains a graded quiz consisting of 10 objective questions related to all components of the module plus one objective question from each previous learning module. Quiz questions will be randomly selected from a question bank specific to each module. Each module quiz question bank contains multiple questions aligning with each individual module objective provided at the top of each learning module page in e-Learning. 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. Students are permitted 2 attempts on each module quiz with the highest score of the 2 attempts used in their final grade calculation. Students will be able to view missed questions on the first attempt, but not the correct answers. A different collection of questions are provided on the second attempt due to the random selection of questions from each of the involved question banks included in the quiz. Aligns with course objectives 1-13.

Yellowdig Participation - This course incorporates an application called Yellowdig that provides a social media-like discussion board providing opportunities for engagement, discussion, and reflection of course topics 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 2,000 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 Saturday, August 6th at 2:59am EST 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. Aligns with course objectives 1-13.

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.

Article Synopses - Students are expected to post a minimum of 4 research article synopses to the Yellowdig discussion board by Saturday, August 6th at 2:59am 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 for deeper reflection. 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. Aligns with course objectives 1-13

Midterm Exam – The midterm exam consists of 50 objective questions (multiple choice, matching, true/false) worth 2 points each. Questions will require the application of course material or knowledge of basic scientific principles covered within each of the first 6 learning modules. Exam questions are generated by the course instructor and are randomly selected from the first 6 module quiz question banks. 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. **ONE** attempt is allowed on the midterm exam. Bonus points earned from the submission of extra credit practice questions (see “Extra Credit” below) are added to the exam score following the due date. The exam will be available for one week following Module 6 in the course schedule and is due Monday, June 27 at 2:59am EST (Sunday, June 26 at 11:59pm PST). Aligns with course objectives 1-6.

Cumulative Final Exam - The cumulative final exam will consist of 100 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 14 learning modules. Exam questions are generated by the course instructor and are randomly selected from all 14 module quiz question banks. 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. **ONE attempt** is allowed on the final exam. In the event that the “raw” final exam score (i.e. the score without any bonus points added) is higher than the midterm exam score (including added bonus points), the raw final exam score will replace the midterm score when calculating the final grade in the course. Bonus points earned from the submission of extra credit practice questions (see “Extra Credit” below) are added to the exam score following the due date. The exam will be available for one week following Module 14 in the course schedule and is due Saturday, August 6th at 2:59am EST (Friday, August 5th at 11:59pm PST). Aligns with course objectives 1-12.

Module Activities - Approximately four ungraded practice assignments are available in each of the 14 learning modules. Links to the practice assignments are under the "Practice" header on the module learning pages. 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 as it pertains to stated course objectives. Scores earned from any practice assignment DO NOT affect a student’s final grade in any way. Aligns with course objectives 1-12.

Extra Credit - This course includes 3 extra credit opportunities:

1. Each learning module contains an extra credit practice-questions assignment. The assignment involves students creating up to 2 practice questions from the module's learning material for inclusion within the practice question banks in the course. Each new question created is worth 0.5 bonus points to be added to the next closest exam to the module (either the midterm or the final exam) for a maximum of 6 bonus points that could be added to these exams, respectively. Extra credit assignments are due at 11:59pm EST on Fridays at the end of the week the module is assigned in the course schedule.
2. Students earning the maximum amount of points available in Yellowdig by the last day of classes will earn 1 bonus point that will be added to their final overall grade.
3. Students who include one multiple choice question related to an article synopsis they post to Yellowdig will receive one bonus point to be added to a low module quiz score at the end of the semester. Students who answer multiple choice questions related to article synopses on Yellowdig will also earn one bonus point to be added to a low module quiz score at the end of the semester. A maximum of **10 bonus points** to be added to module quiz scores can be earned from this opportunity.

***Note Regarding Program Comprehensive Exam** – If you choose APK6611 as one of the courses to include within your comprehensive exam, know that the exam will contain 60 objective questions (multiple choice, true/false, matching) that are pulled at random from a question bank similar to the quizzes and exams in this course. If you complete the exam in a future semester, you will be able to access this APK6611 Canvas course and review lecture videos and exam questions and answers. If you complete the exam during this semester, you will need to work ahead in the course to ensure you have been introduced to all of the topics that are found on it. All modules and assignments are available from the first week of the course. I recommend completing the practice quizzes in each module as many times as needed to gain practice with course content not yet covered by the time you take the exam

WEEKLY COURSE SCHEDULE:

Week	Dates	Topic	Chapter
1	5/9 – 5/15	Overview of Tactical Strength and Conditioning Cardiopulmonary and Endocrine Responses and Adaptations to Exercise	1 2
2	5/16 – 5/22	Skeletal Muscle Anatomy and Biomechanics Bioenergetics	3 4
3	5/23 – 5/29	Testing and Evaluation of Tactical Populations Flexibility and Mobility Exercise	8 12
4	5/30 – 6/5	Development of Resistance Training Programs Resistance Training Exercise Techniques	9 11
5	6/6 – 6/12	Strength and Power Training to Improve Performance Plyometric, Speed, and Agility Exercise Technique and Programming	15 13
6	6/13 – 6/19	Periodization for Tactical Populations	10
7	6/20 – 6/26	Midterm Exam Available 6/19, Due 6/28 at 2:59am EST	
8	6/27 – 7/3	Aerobic Endurance Exercise Technique and Programming Physical Training to Optimize Load Carriage	14 20
9	7/4 – 7/10	Physiological Issues Related to Fire and Rescue Personnel Basic Nutrition for Tactical Populations	17 5
10	7/11 – 7/17	Physiological Issues Related to Law Enforcement Personnel Tactical Fueling	18 6
11	7/18 – 7/24	Physiological Issues Related to Military Personnel Ergogenic Aids	19 7
12	7/25 – 7/31	Care and Rehabilitation of Injured Tactical Populations Wellness Interventions in Tactical Populations	16 21
13	8/1 – 8/5	Organization and Administration Considerations Final Exam	22

Final Exam: Available from Saturday, July 30 at 12:00am EST through Saturday, August 5 at 2:59am EST (Friday, August 4 at 11:59pm PDT)

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.
- Take advantage of extra credit opportunities
- 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.
- Perform well on the final exam.