

George Mason University
College of Education and Human Development
Kinesiology

KINE 360.DL4 — Strength Training: Concepts & Applications
3 Credits, Spring 2021
ONLINE

Faculty

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Prerequisites/Corequisites

BIOL 124, BIOL 125, ATEP 300, KINE 310

University Catalog Course Description

Provides students with an opportunity to develop an in-depth understanding of the principles of strength training and conditioning, including: anatomical and physiological considerations, lifting techniques, equipment selection, program development/evaluation, and weightlifting safety; thus enabling them to teach and train clients.

Course Overview

Emphasis will be placed on assessment, description, and analysis of sport movement and designing training programs to enhance performance variables. While this course will assist students, who desire to sit for the National Strength and Conditioning Association's (NSCA) Certified Strength and Conditioning Specialist (CSCS) Exam, it is NOT a preparation course for the NSCA-CSCS exam. Material for the course will be drawn from the required textbook and assigned readings. Class lectures will be presented in PowerPoint with handouts posted on BLACKBOARD in advance of class meetings.

Course Delivery Method

This course will be delivered using a hybrid (2-75% online) format. Course will be available via Blackboard Learning Management system (LMS) housed in the MyMason portal. You will log in to the Blackboard (Bb) course site using your Mason email name (everything before @masonlive.gmu.edu) and email password. The course site will be available on August 24, 2020. Overall, this will be a highly interactive class and students will be encouraged to participate.

Technical Requirements

To participate in this course, students will need to satisfy the following technical requirements:

- High-speed Internet access with standard up-to-date browsers. To get a list of Blackboard's supported browsers see:

https://help.blackboard.com/Learn/Student/Getting_Started/Browser_Support#supported-browsers

To get a list of supported operation systems on different devices see:

https://help.blackboard.com/Learn/Student/Getting_Started/Browser_Support#tested-devices-and-operating-systems

- Students must maintain consistent and reliable access to their GMU email and Blackboard, as these are the official methods of communication for this course.
- Students may be asked to create logins and passwords on supplemental websites and/or to download trial software to their computer or tablet as part of course requirements.
- The following software plug-ins for PCs and Macs, respectively, are available for free download:
 - Adobe Acrobat Reader: <https://get.adobe.com/reader/>
 - Windows Media Player:
<https://support.microsoft.com/en-us/help/14209/get-windows-media-player>
 - Apple Quick Time Player: www.apple.com/quicktime/download/

Expectations

- Course Week: Our course week will begin on Mondays and finish on Sundays.
- Log-in Frequency:
Students must actively check the course Blackboard site and their GMU email for communications from the instructor, class discussions, and/or access to course materials at least 5 times per week. In addition, students must log-in for all scheduled online synchronous meetings.

- Participation:
Students are expected to actively engage in all course activities throughout the semester, which includes viewing all course materials, completing course activities and assignments, and participating in course discussions and group interactions.
- Technical Competence:
Students are expected to demonstrate competence in the use of all course technology. Students who are struggling with technical components of the course are expected to seek assistance from the instructor and/or College or University technical services.
- Technical Issues:
Students should anticipate some technical difficulties during the semester and should, therefore, budget their time accordingly. Late work will not be accepted based on individual technical issues.
- Workload:
Please be aware that this course is **not** self-paced. Students are expected to meet *specific deadlines* and *due dates* listed in the **Class Schedule** section of this syllabus. It is the student's responsibility to keep track of the weekly course schedule of topics, readings, activities and assignments due.
- Instructor Support:
Students may schedule a one-on-one meeting to discuss course requirements, content or other course-related issues. Those unable to come to a Mason campus can meet with the instructor via telephone or web conference. Students should email the instructor to schedule a one-on-one session, including their preferred meeting method and suggested dates/times.
- Netiquette:
The course environment is a collaborative space. Experience shows that even an innocent remark typed in the online environment can be misconstrued. Students must always re-read their responses carefully before posting them, so as others do not consider them as personal offenses. *Be positive in your approach with others and diplomatic in selecting your words.* Remember that you are not competing with classmates, but sharing information and learning from others. All faculty are similarly expected to be respectful in all communications.
- Accommodations:
Online learners who require effective accommodations to insure accessibility must be registered with George Mason University Disability Services.

Learner Outcomes or Objectives

This course is designed to enable students to do the following:

1. Demonstrate an understanding of the physiological adaptations to resistance training.
2. Explain the role of bioenergetics to metabolic specificity of training.
3. Evaluate and design programs for developing strength, power, speed, and conditioning.
4. Analyze the value of Olympic lifting to athletic performance.
5. Examine the difference between strength training and power training.

Professional Standards

This course meets the Commission on Accreditation of Allied Health Education Programs (CAAHEP) requirements and covers the American College of Sports Medicine's Knowledge-Skills-Abilities (KSA's).

Upon completion of this course, students will have met the following professional standards:

KSA	Description	Lecture, Lab, or both
	GENERAL POPULATION/CORE:	
	EXERCISE PHYSIOLOGY AND RELATED EXERCISE	
1.1.6	Knowledge of the curvatures of the spine including lordosis, scoliosis, and kyphosis.	Lecture
1.1.7	Knowledge of the stretch reflex and how it relates to flexibility.	Lecture
1.1.10	Knowledge of the role of aerobic and anaerobic energy systems in the performance of various physical activities.	Lecture
1.1.14	Knowledge of the anatomical and physiological adaptations associated with strength training.	Lecture
1.1.15	Knowledge of the physiological principles related to warm-up and	Lecture
1.1.20	Knowledge of the characteristics of fast and slow twitch muscle fibers.	Lecture
1.1.21	Knowledge of the sliding filament theory of muscle contraction.	Lecture
1.1.22	Knowledge of twitch, summation, and tetanus with respect to muscle contraction.	Lecture
1.1.23	Knowledge of the principles involved in promoting gains in muscular strength and endurance.	Lecture
1.1.24	Knowledge of muscle fatigue as it relates to mode, intensity, duration, and the accumulative effects of exercise.	Lecture
1.1.32	Knowledge of the concept of detraining or reversibility of conditioning and its implications in exercise programs.	Lecture
1.1.33	Knowledge of the physical and psychological signs of overreaching/overtraining and to provide recommendations for these	Lecture
1.1.35	Knowledge of the effect of the aging process on the musculoskeletal and cardiovascular structure and function at rest, during exercise, and during recovery.	Lecture
1.1.36	Knowledge of the following terms: progressive resistance, isotonic/isometric, concentric, eccentric, atrophy, hyperplasia, hypertrophy, sets, repetitions, plyometrics, Valsalva maneuver.	Lecture
	GENERAL POPULATION/CORE	
1.7.1	Knowledge of the relationship between the number of repetitions, intensity, number of sets, and rest with regard to strength training.	Lecture
1.7.3	Knowledge of the benefits and precautions associated with exercise training in across the lifespan (from youth to the elderly).	Lecture
1.7.11	Knowledge of and the ability to describe exercises designed to enhance muscular strength and/or endurance of specific major	Both

1.7.13	Knowledge of the various types of interval, continuous, and circuit training programs.	Lecture
1.7.29	Ability to identify proper and improper technique in the use of resistive equipment such as stability balls, weights, bands, resistance bars, and water exercise equipment.	Both
1.7.31	Ability to teach a progression of exercises for all major muscle groups to improve muscular strength and endurance.	Both
1.7.42	Ability to design resistive exercise programs to increase or maintain muscular strength and/or endurance.	Lecture
1.7.44	Ability to design training programs using interval, continuous, and <u>circuit training programs</u> .	Lecture
1.7.45	Ability to describe the advantages and disadvantages of various commercial exercise equipment in developing cardiorespiratory fitness, muscular strength, and muscular endurance.	Lecture
	GENERAL POPULATION/CORE: SAFETY, INJURY PREVENTION, AND EMERGENCY	
1.10.5	Knowledge of the physical and physiological signs and symptoms of overtraining and the ability to modify a program to accommodate this condition.	Lecture

Required Texts

Haff G, Triplett T. Essentials of Strength Training and Conditioning. 4th ed. Champaign, IL: Human Kinetics; 2016.

Supplementary materials

Supplementary materials will be used in class and posted on BlackBoard/MyMason Portal. Please download these materials so that you have access to them when needed.

Course Performance Evaluation

Students are expected to submit all assignments on time in the manner outlined by the instructor (e.g., Blackboard, Tk20, hard copy).

Students will be evaluated on content standards (knowledge gained) and performance (demonstration of the content). Content standards will be assessed via quizzes, and exams. Performance will be assessed through completion of lab/activities and group project.

- **Assignments and/or Examinations**

Exams (*Course objectives 1& 2*)

Each student will be required to complete two exams that are non-cumulative. The format for all exams will be multiple choice, and true/false. Examinations represent inquiries regarding student knowledge of fact regarding course content. Examinations demonstrate that the student can remember and apply facts as well as demonstrate a hierarchy of knowledge information.

Reading Comprehension Quizzes (*Course objectives 1, 2, 3, 4, & 5*)

These quizzes will assess your comprehension of the assigned readings. The format of quizzes may be true/false, multiple choice, and/or short answer.

Activities (*Course objectives 1, 2, 3, 4, & 5*)

The intent of the activities is to provide students opportunities to both gain and demonstrate practical knowledge. The activities will require students to work in small groups. Recorded videos of assigned activities. The activities will include several discussion questions.

Homework Assignments (*Course objectives 1, 2, 3, 4, & 5*)

The homework assignments will provide an opportunity for students to get an early start on the final project and receive constructive feedback on drafts prior to project due date.

Project (*Course objectives 1, 2, 3, 4, & 5*)

Students will work within assigned groups on a semester long project. Students will employ strategies and skills acquired during the semester to design a periodized training program for assigned sport. The project represents inquiries regarding student's ability to apply knowledge of fact in field settings.

Professionalism (*Course objectives 1, 2, 3, 4, & 5*)

Students are expected to behave in a professional manner. Depending on the setting professionalism may look slightly different but generally consists of similar components. For undergraduate Kinesiology students in a classroom setting professionalism generally consists of the following components:

Attendance and Participation (50% of Professionalism Grade) – Show up on time to online class meetings, pay attention, and engage yourself in the lessons, discussions, class activities, etc. Demonstrate that you have an interest in the subject matter. Follow George Mason University policies for any missed classes. Arriving to class late or leaving early will be counted as an absence. Students are expected to show up prepared to class and participate during class activities. Students who know they will need to miss a class for a legitimate reason should contact the instructor before the class. Students who unexpectedly miss a class for an excused reason should contact the instructor within 24 hours of missing the class. Make-up tests, quizzes, assignments, or other grades will be granted for excused absences only. Excused absences include: serious illness, official university excused absences and extenuating circumstances. It is the student's responsibility to contact the instructor in order to obtain the make-up work.

Communication (25% of Professionalism Grade) – When communicating with the instructor

and classmates, either face-to-face or via email, students should address the other person appropriately, use appropriate language and maintain a pleasant demeanor.

Example email with instructor:

Dr. Last Name,

I have a question regarding....

Regards,

Student's Name

Example in-person interaction with instructor:

Student: Professor (*instructor's last name*) I have a question regarding....

Professor: (Student's name) I would be happy to help you. What is your question?

Student: My question is.....

Professor: The answer to that question is...

Student: Professor (*instructor's last name*) thank you for your time and availability to answer my questions.

Responsibility/Accountability/ Honesty/Integrity– Professionals take responsibility for their actions and are accountable. This can occur at multiple levels but generally consists of completing assignments on time, submitting work that is of the appropriate quality, honoring commitments and owning up to mistakes. Students are expected to be honest with the instructor, classmates and themselves. Professionals keep their word when committing to something and act in an ethical manner. See George Mason University policy for further guidance.

Self-Improvement/Self-awareness– One should be aware of their strengths/weaknesses and constantly seek to improve. Professionals regularly seek out opportunities to increase their knowledge and improve their current skill set. Specific to this class an example of how a student may demonstrate self-improvement/self-awareness is by attending office hours following a poor grade on an exam or assignment.

Professionalism evaluation – Any professionalism violation will be documented by the instructor. Violations will result in a 1-point deduction from the final average. In extreme cases the student may be dismissed from the class at the discretion of the instructor.

- **Other Requirements**
 - **Email Correspondence**
 - Only messages that originate from a George Mason University email address will be accepted. *Emails with no subject or no text in the body will not be acknowledged.* All email will be responded to in the order in which it is received. Students should allow 48 hours for a response.

- **Course Performance Evaluation Weighting**

This course will be graded on a point system, with a total of 100 possible points.

- **Assignments and/or Examinations**

- A. Written Examinations

Exam 1 20%

Exam 2 20%

B. Reading Comprehension Quizzes 15%

C. Activities 10%

D. Homework Assignment 10%

E. Project 15%

F. Professionalism 10%

Grading Scale

A = 94 – 100	B+ = 87 – 89	C+ = 77 – 79	D = 60 – 69
A- = 90 – 93	B = 84 – 86	C = 74 – 76	F = 0 – 59
	B- = 80 – 83	C- = 70 – 73	

Final Grades:

Once your FINAL GRADE, at the end of the semester is posted on mymasonportal/blackboard, you will have 24 hours to inquire. After that period, your grade will be posted as final on Patriot Web.

Note:

1) Although a B- is a satisfactory grade for a course, students must maintain a 3.00 average in their degree program and present a 3.00 GPA on the courses listed on the graduation application.

2) Any student asking for their grade to be rounded up, increased a letter grade, extra credit only for themselves at the end of the semester, etc. may have their final average reduced by up to 2 points at the discretion of the instructor.

Professional Dispositions

See <https://cehd.gmu.edu/students/policies-procedures/>

Students are held to the standards of the George Mason University Honor Code. You are expected to attend all class sections, actively participate in class discussions, and complete all assignments. Make-up tests, quizzes, assignments, or other grades will be granted for excused absences only. Excused absences include: serious illness, official university excused absences and extenuating circumstances. It is the student's responsibility to contact the instructor in order to obtain the make-up work. Assignments must be turned in on the specified date due or **no credit will be given**.

Class Schedule

Date		Suggested Activity for the Day	Assignments Due	
Module 1: Scientific Foundation Part 1	Week 1	Jan 25-31	Course Introduction	Introduction Post Due Jan 31 st .
			Video Lecture Slides – Chapter 21: Periodization Part 1	Read Chapter 21 (pp 583-584, 587-592)
	Week 2	Feb 1-7	Video Lecture Slides – Chapter 1: Structure of the Body System	Read Chapter 1
				Chapter 1 RCQ Due Feb 7 th .
Module 2: Scientific Foundation Part 2	Week 3	Feb 8-14	Video Lecture Slides – Chapter 2: Biomechanics	Read Chapters 2 & 14
			Lectures Slides – Warm up and flexibility training	Chapter 2 RCQ Due Feb 14 th .
	Week 4	Feb 15-21	Activity 1: Warm-up and Flexibility	Read Chapter 3
			Video Lecture Slide – Chapter 3: Bioenergetics	Homework Assignment 1 & Chapter 3 RCQ Due Feb 21 st .
Module 3: Scientific Foundation Part 3	Week 5	Feb 22-28	Video Lecture Slide – Chapter 4: Endocrine Responses	Read Chapter 4
				Activity 1 & Chapter 4 RCQ Due Feb 28 th .
Week 6	Mar 1-7	Video Lecture Slide – Chapter 7: Age and sex related differences	Read Chapter 7	

				Chapter 7 RCQ Due March 7 th .
	Week 7	Mar 8-14	Activity 2: Resistance Training	Read Chapters 5 & 15 Homework Assignment 2 Due Mar 11th.
			Video Lecture Slides – Chapter 5: Adaptations to Anaerobic training programs	Chapter 5 RCQ Due March 14 th .
Module 4: Practical/A pplied Part 1	Week 8	Mar 15-21	Review for Exam #1	Activity 2 Due Mar 17th.
			Exam #1	Exam 1 Due Mar 21st. Read Chapters 12 & 13
	Week 9	Mar 22-28	Video Lecture Slides – Chapter 12 & 13: Performance testing	<i>Schedule group meetings</i>
			Activity 3: Performance Assessment	Chapters 12&13 RCQ Due March 28 th .
	Week 10	Mar 29- Apr 4	Video Lecture Slides – Chapter 21: Periodization Part II	Read Chapter 21 (pp 584-586, 593-595) (Review pp 583-584, 587-592)
			Activity 3 & Chapter 21 RCQ Due April 4 th .	
Module 5: Practical/A pplied Part 2	Week 11	Apr 5-11	Video Lecture Slides – Chapter 17: Resistance training	Read Chapter 17
				Homework Assignment 3 &

				Chapter 17 RCQ Due April 11 th .
	Week 12	Apr 12-18	Activity 4: Olympic lifts & Kettlebells	Read Chapter 18
			Video Lecture Slides – Chapter 18: Plyometric training	Chapter 18 RCQ Due April 18 th
Module 6: Practical/A pplyed Part 3	Week 13	Apr 19-25	Activity 5: Plyometric training	Read Chapter 19 Activity 4 Due & Homework Assignment 4 Due Apr 22nd.
			Video Lecture Slides – Chapter 19: Speed and Agility	Chapter 19 RCQ Due April 25 th .
	Week 14	Apr 26-30 <i>Last week of classes</i>	Video Lecture Slides – Chapter 22: Rehabilitation and reconditioning	Read chapter 22 Activity 5 Due Apr 29th.
			Group Presentations	.
		May 1-2	Study for Final Exam	Chapter 22 RCQ Due May 2 nd
Week 15	May 3-9 <i>Exam Period</i>	Group Presentations	Final Exam Due Midnight on May 9th.	

Note: Faculty reserves the right to alter the schedule as necessary, with notification to students.

Core Values Commitment

The College of Education and Human Development is committed to collaboration, ethical leadership, innovation, research-based practice, and social justice. Students are expected to adhere to these principles: <http://cehd.gmu.edu/values/>.

GMU Policies and Resources for Students

Policies

- Students must adhere to the guidelines of the Mason Honor Code (see <https://catalog.gmu.edu/policies/honor-code-system/>).
- Students must follow the university policy for Responsible Use of Computing (see <https://universitypolicy.gmu.edu/policies/responsible-use-of-computing/>).
- Students are responsible for the content of university communications sent to their Mason email account and are required to activate their account and check it regularly. All communication from the university, college, school, and program will be sent to students **solely** through their Mason email account.
- Students with disabilities who seek accommodations in a course must be registered with George Mason University Disability Services. Approved accommodations will begin at the time the written letter from Disability Services is received by the instructor (see <https://ds.gmu.edu/>).
- Students must silence all sound emitting devices during class unless otherwise authorized by the instructor.

Campus Resources

- Support for submission of assignments to Tk20 should be directed to tk20help@gmu.edu or <https://cehd.gmu.edu/aero/tk20>. Questions or concerns regarding use of Blackboard should be directed to <https://its.gmu.edu/knowledge-base/blackboard-instructional-technology-support-for-students/>.
- For information on student support resources on campus, see <https://ctfe.gmu.edu/teaching/student-support-resources-on-campus>

Notice of mandatory reporting of sexual assault, interpersonal violence, and stalking:

As a faculty member, I am designated as a “Responsible Employee,” and must report all disclosures of sexual assault, interpersonal violence, and stalking to Mason’s Title IX Coordinator per University Policy 1202. If you wish to speak with someone confidentially, please contact one of Mason’s confidential resources, such as Student Support and Advocacy Center (SSAC) at 703-380-1434 or Counseling and Psychological Services (CAPS) at 703-993-2380. You may also seek assistance from Mason’s Title IX Coordinator by calling 703-993-8730, or emailing titleix@gmu.edu.

For additional information on the College of Education and Human Development, please visit our website <https://cehd.gmu.edu/students/>.

Student Acknowledgement of Syllabus

I, _____, by signing below, attest to the following:
(Print First and Last Name)

*I have read the course syllabus for KINE 360 in its entirety, and I understand the policies contained therein. This syllabus serves as a binding contract for KINE 360 between the instructor and me.

*I have a clear understanding of the due dates for assignments and examinations, and I accept responsibility for the material.

*I am aware that failure to submit assignments by the dates assigned will result in no points awarded as late work will not be accepted.

*I understand that if I am using emitting sound technology or personal computers I will be dismissed from class for the day, counted as an absence, and not permitted to make up missed assignments

*I understand the instructor reserves the right to alter the provided schedules as necessary and I am responsible for the assignments and examination dates for the most current version of the syllabus schedule.

*I accept responsibility for reading announcements that are sent to me via e-mail through BlackBoard/MyMason Portal; it is my responsibility to access my Blackboard/MyMason Portal e-mail for messages, or forward Blackboard/MyMason Portal e-mail as per the directions provided in the syllabus.

*Points cannot be earned in this class until you have signed and handed this form to the instructor.

(Signature)

(Date)

(Student Copy: This copy should remain attached to your syllabus)



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(Print First and Last Name)

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*Points cannot be earned in this class until you have signed and handed this form to the instructor.

(Signature)

(Date)

(Instructor Copy: Submit to the instructor at the end of the first week)