GEORGE MASON UNIVERSITY
School of Recreation, Health, and Tourism
Division of Health and Human Performance

KINE 360 – 001: Strength Training: Concepts & Applications (3)
Fall 2014

DAY/TIME:	M/W 10:30 – 11:45 pm	LOCATION:	PW Bull Run Hall 148
PROFESSOR:	Adam Ayash, MS, CSCS	EMAIL ADDRESS:	aayash@gmu.edu
OFFICE LOCATION:	TBA	OFFICE HOURS:	M 12:00 – 1:00pm, or by appointment

PREREQUISITES:
BIOL 124, BIOL 125, ATEP 300, and KINE 310

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 OBJECTIVES:
Upon completion of KINE 360, competency should be demonstrated in the following areas:
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.

COURSE OVERVIEW:
Emphasis will be placed upon assessment, description, and analysis of sport movement and designing training programs to enhance performance variables. While this course will assist those 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 of published research. Class lectures will be presented in PowerPoint with handouts posted on BLACKBOARD.

- Attendance - Students are expected to attend class. A grade of zero will be assigned to any missed assignment without prior permission from the instructor. Late assignments will receive a letter grade deduction for each 24 hr period past the deadline. Attendance is required at laboratory sessions.

- Classroom Demeanor - Students are expected to attend all class sections, ***participate in class discussions***, complete in-class exercises, and fulfill all assignments. Anyone exhibiting inappropriate behavior may be asked to leave (e.g. sleeping in class, texting).

ACCREDITATION STANDARDS

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

KSA	Description	Lecture, Lab, or both
	GENERAL POPULATION/CORE: EXERCISE PHYSIOLOGY AND RELATED EXERCISE SCIENCE	
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 cool-down.	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 problems.	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 EXERCISE PRESCRIPTION AND PROGRAMMING	
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 muscle groups.	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 circuit training programs.	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 PROCEDURES	
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

NATURE OF COURSE DELIVERY:
This course will be delivered in a face-to-face type of environment. This class will consist of both lecture and laboratory instruction.

REQUIRED READINGS:
Baechle, Thomas R. & Roger Earle (ed.). Essentials of Strength Training and Conditioning (3rd edition). Human Kinetics, Champaign, 2008. ISBN-13: 978-0-7360-5803-2

EVALUATION:

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

A. Written Examinations	
Unit Exam #1	30% (Objectives 1,2)
Unit Exam #2 (Final Exam)	30% (Objectives 3,4,5)
B. Participation/In-class activities	10% (Objectives 1-5)
C. Laboratory sessions (5)	10% (Objectives 1-5)
D. Final Project	20% (Objectives 1-5)

FINAL EXAM:
10:30am – 1:15 pm, Wednesday December 10, 2014 (bring scantron sheet)

Grading Scale

A = 94 – 100	B+ = 88 – 89	C+ = 78 – 79	D = 60 – 69
A- = 90 – 93	B = 84 – 87	C = 74 – 77	F = 0 – 59
	B- = 80 –83	C- = 70 – 73	

Tentative Course Schedule

DATE			TOPIC	READINGS/ASSIGNMENT DUE
M	August	25	Course Introduction	Syllabus Review
W		27	Neuro Muscular System + Bioenergetics	B&E: CH 1, 2
M	September	1	***Labor Day NO CLASS!***	
W		3	Bioenergetics	B&E: CH 2
M		8	Biomechanics & Movement	B&E: CH 4
W		10	***Lab 1 Soft Tissue Work & Mobility***	***Dress Appropriately***
M		15	***Lab 2 Dynamic Warm-Up***	***Dress Appropriately***
W		17	Endocrine System	B&E: CH 3
M		22	Truth About Exercise Documentary	B&E: CH 3
W		24	Anaerobic Training Adaptations	B&E: CH 5
M		29	Anaerobic Training Adaptations+ Lab 3 preview	B&E: CH 5

DATE			TOPIC	READINGS/ASSIGNMENT DUE
W	October	1	***Lab 3 Squat & DL progressions***	***Dress Appropriately***
M		6	Midterm Review	B&E: CH 1-5
W		8	***Midterm Exam***	***Bring Scantron***
M		13	***Columbus Day NO CLASS!***	
T		14	Age & Gender Training Differences	B&E: CH 7
W		15	Testing & Evaluation	B&E: CH 11, 12
M		20	Testing & Evaluation	B&E: CH 11, 12
W		22	***Guest Speaker TBA***	
M		27	Building a S&C Program + Resistance Training	B&E: CH 14, 15
W		29	Resistance Training Technique	B&E: CH 14, 15
M	November	3	Plyometrics + Lab 4 Preview	B&E: CH 16
W		5	***Lab 4 Speed, Power & Plyometrics***	***Dress Appropriately***
M		10	Speed Development	B&E: CH 17
W		12	Periodization	B&E: CH 19
M		17	Kettlebell Training + Lab 5 Preview	***Bboard Articles; Lab 4 Handout***
W		19	***Lab 5 Kettlebell Training***	***Dress Appropriately to Get Up!***
M		24	Periodization	B&E: CH 19
W		26	***Thanksgiving Break NO CLASS!***	
M	December	1	Final Project Presentations	Dress Business casual
W		3	Final Project Presentations	Dress Business casual
M		8	***Reading Day! Final Review TBA?***	Study for Final Exam
W		10	***Final Exam 10:30am – 1:15pm***	***Bring scantron sheet/calc!***

Note: Faculty reserves the right to alter the schedule as necessary. Guest Speaker dates TBD!

Professionalism

Kinesiology students are expected to behave in a professional manner. Depending upon the setting professionalism may appear different, but typically consists of similar components. For undergraduate Kinesiology students in a classroom setting professionalism generally comprises the following components:

Attendance – Show up on time to class and pay attention. If you cannot attend a class for a legitimate reason please notify the instructor ahead of time. If you have to unexpectedly miss a class due to something out of your control, contact the instructor within 24 hours to notify them what happened and to see if there is anything you need to do to make up your absence.

Communication – When communicating with the instructor and classmates, either face-to-face or via the assigned George Mason University email address, students should address the other person appropriately, use appropriate language and maintain a pleasant demeanor.

Participation – Participate in class discussions and activities. Demonstrate that you have an interest in

the subject matter.
Responsibility/Accountability – 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.
Honesty/Integrity – 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.
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.

Student Expectations

- Students must adhere to the guidelines of the George Mason University Honor Code [See http://oai.gmu.edu/honor-code/].
- Students with disabilities who seek accommodations in a course must be registered with the George Mason University Office of Disability Services (ODS) and inform their instructor, in writing, at the beginning of the semester [See http://ods.gmu.edu/].
- Students must follow the university policy for Responsible Use of Computing [See http://universitypolicy.gmu.edu/policies/responible-use-of-computing/].
- Students are responsible for the content of university communications sent to their George Mason University 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 must follow the university policy stating that all sound emitting devices shall be turned off during class unless otherwise authorized by the instructor.

Campus Resources

- The George Mason University Counseling and Psychological Services (CAPS) staff consists of professional counseling and clinical psychologists, social workers, and counselors who offer a wide range of services (e.g., individual and group counseling, workshops and outreach programs) to enhance students' personal experience and academic performance [See http://caps.gmu.edu/].
- The George Mason University Writing Center staff provides a variety of resources and services (e.g., tutoring, workshops, writing guides, handbooks) intended to support students as they work to construct and share knowledge through writing [See http://writingcenter.gmu.edu/].
- For additional information on the College of Education and Human Development, School of Recreation, Health, and Tourism, please visit our website [See http://rht.gmu.edu].

PROFESSIONAL BEHAVIOR: Students are expected to exhibit professional behaviors and dispositions at all times.

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.