PLNU forward

Department of Kinesiology

EXS 3050: Fitness Assessment & Exercise Prescription

3 Units

Spring 2020

Meeting days: Monday, Wednesday	**Instructor:** Susan Ganz, PhD, ATC, FMSC
Meeting times: 8:00am – 9:15am	**Office phone:** 619-849-2704
Meeting location: K1	**Cell Phone:** 619-701-2567
Class dates: 1-14-20 through 5-1-20	**E-mail:** susanganz@pointloma.edu
Final Exam: Monday May 1st 7:30am – 10:00am	**Office hours:**

COURSE DESCRIPTION AND AIM

In-depth study of the principles and techniques used to assess health and physical fitness and to design and prescribe exercise programs and physical activities. Students will acquire the knowledge and skills necessary to address the fitness needs of apparently healthy populations, those with medical considerations, and athletic populations.

PREREQUISITES

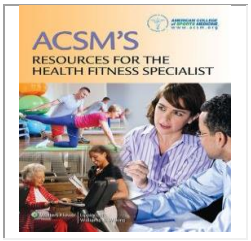
KIN 340: Exercise Physiology & KIN 340L: Exercise Physiology lab

STUDENT LEARNING OUTCOMES

Upon completion of this course, the student will:

1. Recognize the importance of physical activity in the prevention of hypokinetic diseases.
2. Develop knowledge of the principles of physical fitness assessment, interpretation of results, and exercise prescription.
3. Have the opportunity for practical experiences using field and laboratory tests for the appraisal of physical fitness status and the design of individualized exercise programs in the following areas:
   A) health screening & risk stratification
   B) cardiorespiratory fitness
   C) muscular strength & endurance
   D) body composition & weight management
   E) flexibility & posture
4. Develop knowledge of the principle of exercise for individuals with controlled cardiovascular, pulmonary, and metabolic diseases.
5. Identify and describe the theories and models used to explain physical activity behavior changes.

REQUIRED TEXT



Title	**ACSM's Resources for the Health Fitness Specialist**
Author	ACSM: American College of Sports Medicine
ISBN-13	978-1-4511-1480-5
Publisher	Lippincott, Williams & Wilkens
Publication Date	2014

ACADEMIC ACCOMMODATIONS

While all students are expected to meet the minimum academic standards for completion of this course as established by the instructor, students with disabilities may require academic accommodations. At PLNU, students requesting academic accommodations must file documentation with the Disability Resource Center, located in the Bond Academic Center. Once the student files documentation, the Resource Center will contact Dr. Sullivan and provide written recommendations for reasonable and appropriate accommodations to meet your individual learning needs. Please accomplish all documentation during the first week of the semester.

*This policy assists the University in its commitment to full compliance with Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities (ADA) Act of 1990, and ADA Amendments Act of 2008, all of which prohibit discrimination against students with disabilities and guarantees all qualified students equal access to and benefits of PLNU programs and activities.

FERPA POLICY

As a student at Point Loma, you have a legal right to privacy as outlined in the federal FERPA (Family Educational Rights and Privacy Act) legislation. If I post grades or return assignments, I'll do so in a way that does not publically reveal your name, PLNU student ID, or social security number without your written permission.

FINAL EXAMINATION POLICY

Successful completion of this class requires taking the final examination **on its scheduled day**. The final examination schedule is posted on the Class Schedules site. No requests for early examinations or alternative days will be approved.

ACTIVE LEARNING AND EVIDENCE BASED MEDICINE

Your active participation in this class will be required. You will be responsible for your own learning by reviewing class material before and after class. I will guide you in this process; however, in the end the onus of learning will be your responsibility. **Become intrinsically motivated to improve yourself and your understanding of management theories, policy and procedures and application of**; if you do this you will succeed every time.
Here are some KEYS to success:

- EFFORT (Work hard)
- APPROACH (Work smart)
- ATTITUDE (Think positively)

Evidence based medicine (EBM) is the integration of clinically relevant research, clinical skills and experience, and patient preferences and values (Sackett et al 2000). The increased awareness **and focus on the practice of Evidence Based Medicine comes from our daily need for valid information about diagnosis, prognosis, therapy, and prevention.** We want to ask local questions about the effectiveness of therapeutic modalities and design ways to find answers. The EBM portion of this course is **designed so students can explore therapeutic modalities commonly used in the athletic training setting** and determine what evidence is available to support their current uses.

USE OF TECHNOLOGY

Point Loma Nazarene University encourages the use of technology for learning, communication, and collaboration. In this course, we will rely on Canvas for accessing course materials, submitting assignments, and collaborating in discussion boards and blogs. We will also use cell phone polling when it enhances our in-class activities. You'll want to make sure you are comfortable with these tools, so take advantage of our computer LabTechs to answer questions and help you with any technology issues. You may also call the Help Desk at x2222.

You are welcome to bring your laptop, iPad, and/or cell phone to class—but please make sure you use them appropriately and responsibly. ***If a tech tool becomes a distraction or disruption while class is in session, I will ask you to put it away or invite you to no longer bring it to class.***

ACADEMIC DISHONESTY

Students should demonstrate academic honesty by doing original work and by giving appropriate credit to the ideas of others. As stated in the university catalog, "Academic dishonesty is the act of presenting information, ideas, and/or concepts as one's own when in reality they are the results of another person's creativity and effort. Such acts include plagiarism, copying of class assignments, and copying or other fraudulent behavior on examinations. A faculty member who believes a situation involving academic dishonesty has been detected may assign a failing grade for a) that particular assignment or examination, and/or b) the course."

COURSE REQUIREMENTS

*Please Note: *The PLNU Catalog states that 1 semester unit represents an hour of class per week, and 2 hours of preparation are normal for each hour of class. Therefore, if you spend about 6 hrs per week outside of class in preparation, you will significantly increase your chances of doing well!*

Course Assignments

Journal Article Reviews (30 points each)
An article will be given to students to evaluate and analyze. The article will contain important findings or conclusions relative to current topics discussed in lecture and tested in lab. The reviews should be 1-2 pages in length (double spaced, 12 pt. font, Times New Roman or equivalent).Journal article reviews should include the following information:

• Purpose • Hypothesis • Purpose • Methods • Results • Conclusions	• What were the significant findings and implications • Strengths and weaknesses of article? • Would you recommend the article to be used again?

Course Exams

Quizzes (4 @ 15 points each)
The quizzes will be designed to test the students' comprehension of the material presented via lectures and independent studying of the textbook. Questions will include: multiple choice, fill in the blank, matching, true/false and short answer.

Exams (4 @ 50 points each)
The exam will be designed to test the students' comprehension of the material presented via lectures and independent studying of the textbook. Questions will include: multiple choice, fill in the blank, matching, true/false, short answer, and essay formats.

Final Exam (100 points)
The final exam will be cumulative and summative. Information from the entire semester will be tested.

Course Grading

GRADE	POINT VALUE
A	94-100
A-	90-93
B+	88-89
B	84-87
B-	80-83
C+	78-79
C	74-77
C-	70-73
D+	68-69
D	64-67
D-	60-63
F	0-59

Course Rules/Guidelines

Class Attendance and Participation
Class experiences contain information that you will need in order to do well in this course. A pattern of missing classes will cause your grade to be lowered or you may be "de-enrolled" **(Six misses, total from all sections, will qualify you for de-enrollment).** Each student is required to be in every class meeting without fail. Responsible attendance and promptness are essential to gain the maximum benefits from this class. There are no allowed or excused absences. (Exceptions: When necessitated by certain college-sponsored activities and are approved in writing by the Academic Dean.)

Excused absences for emergencies are accepted with notification ASAP. Role will be taken and students missing more than 6 classes will be de-enrolled from the class. If an eclass quiz is due on the day a student misses class the student will receive a 0 on that quiz whether it was completed or not.

Late Work

Assignments not turned in the day and time they are due will automatically be 10% off every day they are late.

Make-Ups
Make up exams/quizzes will be given only if the professor is notified of the excused absence prior to the missed class or if the student has a legitimate emergency.

Email
Email will be the **MAIN** form of communication used by the professor outside of class. Students are expected to check their email at least **ONCE A DAY**. If you know of issues with your @pointloma.edu account please notify the professor immediately.

Acceptable behavior

✓ Make sure cell phones are turned off and put away (no texting or making/receiving calls during class).
✓ Even if you don't always agree, you will have respect for each others' opinions as to what is being discussed in class.
✓ Everyone learns at a different rate; at no time should you make other's feel inadequate.

Adding/Dropping
It is the student's responsibility to maintain his/her class schedule. Should the need arise to drop this course (personal emergencies, poor performance, etc.), the student has the responsibility to follow

through (provided the drop date meets the stated calendar deadline established by the university), not the instructor. Simply ceasing to attend this course or failing to follow through to arrange for a change of registration (drop/add) may easily result in a grade of F on the official transcript.

Cheating and Plagiarism

Cheating is the actual or attempted practice of fraudulent or deceptive acts for the purpose of improving one's grade or obtaining course credit; such acts also include assisting another student to do so. Plagiarism is a specific form of cheating which consists of the misuse of the published and/or unpublished works of others by misrepresenting the material (i.e., their intellectual property) so used as one's own work. Penalties for cheating and plagiarism range from a 0 or F on a particular assignment, through an F for the course, to expulsion from the university. For more information on the University's policy regarding cheating and plagiarism, refer to the student handbook:
http://www.pointloma.edu/Handbook/Policies/Academic_Honesty.htm

Copyright Policy

Point Loma Nazarene University, as a non-profit educational institution, is entitled by law to use materials protected by the US Copyright Act for classroom education. Any use of those materials outside the class may violate the law.

Important Dates

- January 14 – Classes Begin
- January 20 – MLK Day (No Class)
- January 24 – Last Day to add Semester Class
- March 9-13 – Spring Break (No Class)
- March 27 – Last Day to Drop Semester Class
- April 9-13 – Easter Recess (No Class)
- May 1 – Classes End
- May 4 – May 8 - Finals Week

Course Outline

Date	Topic	Assignments Due	Required Reading
1-14-20 (T)	Introduction and Overview. Certifications Physical Activity (Risks & Benefits)		ACSM – Ch. 1
1-15-20 (W)	Physical Activity, Health, and Hypokinetic Disease.		ACSM – Ch.1
1-20-20 (M)	**NO CLASS - MLK DAY**		
1-22-20 (W)	Preliminary Health Screening and Risk Classification. A. Health evaluation. B. Lifestyle evaluation. C. Informed consent.		ACSM – Ch.2
1-27-20 (M)	Principles of Prescription & Exercise Adherence A. Basic principles for exercise program design. 1. Components of an exercise program (frequency, intensity, duration, and mode). 2. Principles of training. 3. Components of fitness. B. The art and science of exercise prescription (safety and effectiveness). C. Exercise program adherence. D. Certification and licensure	**Quiz 1**	
1-29-19 (W)	**Exam 1**		
2-3-20 (M)	Assessing HR/BP/ECG Assessment		ACSM Ch. 3 pgs51&52
2-5-20 (W)	Designing Cardiorespiratory Exercise Programs. A. The exercise prescription. B. B. Essentials of a cardiorespiratory exercise workout.		ACSM Ch. 3 pgs 43-56

2-10-20 (M)	Designing Cardiorespiratory Exercise Programs. C. Aerobic training methods and modes D. D. Personalized exercise programs..		ACSM Ch. 3 – 56-69
2-12-20(W)	Assessing Muscular Strength & Endurance • Basic Structure & Function • Assessment Protocols	**Quiz #2**	ACSM Ch.4 pgs. 80-84
2-17-20 (M)	Designing Resistance Training Programs. A. Types of resistance training. B. Fundamental principles of resistance training		ACSM Ch. 4 pgs. 84-88
2-19-20 (W)	Designing Resistance Training Programs. C. Developing a resistance training program. (design and program variables) **(Online)**	**Critique #1**	ACSM Ch. 4 pgs. 89-101
2-24-20 (M)	**Exam #2**		
2-26-20 (W)	Assessing Body Composition A. Classification & Uses of Body Composition Measures B. Body Composition Models		ACSM Ch. 6 pgs. 139 - 149
3-2-20(M)	Assessing Body Composition C. Methods		
3-4-20 (W)	Designing Weight Management Programs		ACSM Ch. 6 pgs 150 - 160
Mar 9-14	**Spring Break!**		
3-16-20(M)	Flexibility A. Principles of flexibility B. Modes		ACSM Ch. 5 pgs. 108-112
3-18-20 (W)	Flexibility C. Assessment Protocols D. Program Design		ACSM Ch. 5 pgs.113-133
3-23-20 (M)	Low Back Care		
3-25-20(W)	Balance A. Definitions & Nature B. Risk Factors	**Quiz #3**	
3-30-20 (M)	Balance C. Assessment		
4-1-20**(W)**	Balance D. Program Design	**Critique #2**	
4-6-20(M)	**Exam #3**		
4-8-20 (W)	FMS – corrective Exercises		
4/9-4/13	**EASTER RECESS – No Class**		
4-15-20 (W)	Programming for Special Populations. A. Cardiac patients. B. Pulmonary patients		ACSM Ch. 7
4-20-20 (M)	Programming for Special Populations C. Musculoskeletal limitations. D. Across the lifespan		ACSM Ch. 8 & 9
4-22-20 (W)	Behavior Change A. Theories of Behavior Change B. Facilitating Change C. Stress Management		ACSM Ch. 10-12
4-27-20 (M)	Business – Leadership & Management; Professional Behaviors and Ethics	**Quiz #4**	ACSM Ch. 14 ACSM Ch. 17
4-29-20(W)	**Exam #4**		
Finals	**FINAL EXAMINATION: Monday May 1st 7:30am – 10:00am**		**Comprehensive**

Knowledge, Skills, and Abilities (KSAs) for students in Exercise Science ACSM Certified Health Fitness Specialist

EXS 350: Fitness Assessment & Exercise prescription

KSA#'s	KSA description
	GENRAL POPULATION/CORE:EXERCISE PHYSIOLOGY AND RELATED EXERCISE SCIENCE
1.1.8	Knowledge of biomechanical principles that underlie performance of the following activities: walking, jogging, running, swimming, cycling, weight lifting, and carrying or moving objects.
1.1.9	Ability to describe the systems for the production of energy.
1.1.10	Knowledge of the role of aerobic and anaerobic energy systems in the performance of various physical activities.
1.1.14	Knowledge of the anatomic and physiologic adaptations associated with strength training.
1.1.15	Knowledge of the physiologic principles related to warm-up and cool-down.
1.1.16	Knowledge of the common theories of muscle fatigue and delayed onset muscle soreness (DOMS).
1.1.17	Knowledge of the physiologic adaptations that occur at rest and during submaximal and maximal exercise following chronic aerobic and anaerobic exercise training.
1.1.18	Knowledge of the differences in cardiorespiratory response to acute graded exercise between conditioned and unconditioned individuals.
1.1.28	Knowledge of and ability to describe the implications of ventilatory threshold (anaerobic threshold) as it relates to exercise training and cardiorespiratory assessment.
1.1.29	Knowledge of and ability to describe the physiologic adaptations of the pulmonary system that occur at rest and during submaximal and maximal exercise following chronic aerobic and anaerobic training.
1.1.34	Knowledge of and ability to describe the changes that occur in maturation from childhood to adulthood for the following: skeletal muscle, bone structure, reaction time, coordination, posture, heat and cold tolerance, maximal oxygen consumption, strength, flexibility, body composition, resting and maximal heart rate, and resting and maximal blood pressure.
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.
1.1.36	Knowledge of the following terms: progressive resistance, isotonic/isometric, concentric, eccentric, atrophy, hyperplasis, hypertrophy, sets, repetitions, plyometrics, Valsalva maneuver.
1.1.37	Knowledge of and skill to demonstrate exercises designed to enhance muscular strength and/or endurance of specific major muscle groups.
1.1.38	Knowledge of and skill to demonstrate exercises for enhancing musculoskeletal flexibility.
1.1.42	Knowledge of the primary action and joint range of motion for each major muscle group.
1.1.43	Ability to locate the anatomic landmarks for palpation of peripheral pulses and blood pressures.
	GENERAL POPULATION/CORE: PATHOPHYSIOLOGY AND RISK FACTORS
1.2.1	Knowledge of the physiologic and metabolic responses to exercise associated with chronic disease (heart disease, hypertension, diabetes mellitus, and pulmonary disease).
1.2.6	Knowledge of the risk-factor thresholds for ACSM risk stratification, which includes genetic and lifestyle factors related to the development of CAD.
	GENERAL POPULATION/CORE: HEALTH APPRAISAL, FITNESS AND CLINICAL EXERCISE TESTING

1.3.1	Knowledge of and ability to discuss the physiologic basis of the major components of physical fitness: flexibility, cardiovascular fitness, muscular strength, muscular endurance, and body composition.
1.3.2	Knowledge of the value of the health/medical history.
1.3.3	Knowledge of the value of a medical clearance before exercise participation.
1.3.4	Knowledge of and the ability to perform risk stratification and its implications toward medical clearance before administration of an exercise test or participation in an exercise program.
1.3.6	Knowledge of the limitations of informed consent and medical clearance before exercise testing.
1.3.8	Skill in accurately measuring heart rate and blood pressure, and obtaining rating of perceived exertion (RPE) at rest and during exercise according to established guidelines.
1.3.9	Skill in measuring skinfold sites, skeletal diameters, and girth measurements used for estimating body composition.
1.3.15	Ability to explain the purpose and procedures and perform the monitoring (heart rate, RPE, and blood pressure) of clients before, during, and after cardiorespiratory fitness testing.
1.3.16	Ability to instruct participants in the use of equipment and test procedures.
1.3.17	Ability to explain the purpose of testing, determine an appropriate submaximal or maximal protocol, and perform an assessment of cardiovascular fitness on the treadmill or cycle ergometer.
	GENERAL POPULATION/CORE: EXERCISE PRESCRIPTION AND PROGRAMMING
1.7.6	Knowledge of the differences in the development of an exercise prescription for children, adolescents, and older participants.
1.7.7	Knowledge of and ability to describe the unique adaptations to exercise training in children, adolescents, and older participants with regard to strength, functional capacity, and motor skills.
1.7.8	Knowledge of common orthopedic and cardiovascular considerations for older participants and the ability to describe modifications in exercise prescription that are indicated.

1.10.17	Ability to identify the components that contribute to the maintenance of a safe environment, including equipment operation and maintenance, proper sanitation, safety and maintenance of exercise areas, and overall facility maintenance.
1.10.18	Knowledge of basic ergonomics to address daily activities that may cause musculoskeletal problems in the workplace and the ability to recommend exercises to alleviate symptoms caused by repetitive movements.
	GENERAL POPULATION/CORE:PROGRAM ADMINISTRATION, QUALITY ASSURANCE, AND OUTCOME ASSESSMENT
1.11.1	Knowledge of the Health Fitness Specialist's role in administration and program management within a health/fitness facility.
1.11.2	Knowledge of and the ability to use the documentation required when a client shows signs or symptoms during an exercise session and should be referred to a physician.
1.11.8	Ability to create and maintain records pertaining to participant exercise adherence, retention, and goal setting.
	CARDIOVASCULAR: PATHOPHYSIOLOGY AND RISK FACTORS
2.2.1	Knowledge of cardiovascular risk factors or conditions that may require consultation with medical personnel before testing or training, including inappropriate changes of resting or exercise heart rate and blood pressure, new onset discomfort in chest, neck, shoulder, or arm; changes in the pattern of discomfort during rest or exercise; fainting or dizzy spells; and claudication.
2.2.2	Knowledge of the pathophysiology of myocardial ischemia and infarction.