Programming and Prescription I

Instructor: Heidi Zenie

Office: C201

Office Hours: T/R 1:00-2:00, 3:00-4:00

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Course Description

Students will be introduced to fitness assessment, testing and exercise criteria as well as guidelines for safe and efficient cardiovascular resistance and speed and agility training techniques. Exercise testing and prescription for healthy cardiovascular, respiratory, endocrine, skeletal and nervous systems will be stressed. Pulmonary diseases and post orthopedic injuries will also be included in the context of this course. The need for essential nutrient intake is another important aspect of this course.

Course Objectives

1. To develop knowledge of the principles of physical fitness assessment and exercise prescription
2. To define the terms test, measurement and evaluation
3. To differentiate norm- and criterion-referenced standards
4. Differentiate formative and summative evaluation processes
5. Identify the purpose of measurement and evaluation
6. Identify the importance of objectives in the decision making process

Instructional Materials

Heywood, V. 2010. *Advanced Fitness Assessment and Exercise Prescription*, 6th ed. Champaign, IL: Human Kinetics.

Lippert, L., Kinesiology Flashcards, 3rd ed., Philadelphia, Pa: F.A. Davis.

Academic Misconduct

The instructor has primary responsibility for control over classroom behavior and maintenance of academic integrity, and can request the temporary removal or exclusion from the classroom of any student engaging in conduct that violates the general rules and regulations of the institution. Extended or permanent exclusion from lecture or laboratory activities or further disciplinary action can only be effected through appropriate procedures of the institution.

Plagiarism, cheating on quizzes or tests, or any form of academic dishonesty is strictly prohibited. Students guilty of academic dishonesty directly or indirectly will receive a zero for the exercise, quiz or test and may receive an "F" grade for the course in addition to other possible disciplinary sanctions which may be imposed through the regular institutional procedures. Any student that believes that he or she has been erroneously accused may appeal the case through the appropriate institutional procedures if their grade was affected.

Grade Determination

a. Written Exams
   There will be 3 written exams each worth 100 points
b. Laboratory Experiences and Skills
   Each Lab is worth 20 points
c. Class Project
   The class project will be spread out through the semester. The project will worth 400 points
   Phase I Health Screening and Evaluation
   Phase II Cardiovascular Fitness Assessment and Aerobic Exercise
   Phase III Body Composition
   Phase IV Musculoskeletal Fitness Assessment and Resistance Training Program
d. Homework/vocabulary 10 points each

You can use this chart to determine your running grade in the class. Please follow on Backboard: My Grades.

Letter Grade	Point Ranges	Grade Point Value
A	950 - 1000	4.000
A-	900 - 949	3.667
B+	890 - 899	3.333
B	810 - 889	3.000
B-	800 - 809	2.667
C+	790 - 799	2.333
C	710 - 789	2.000
C-	700 - 709	1.667
D+	690 - 699	1.333
D	610 - 679	1.000
D-	600 - 609	0.667
F	0 - 599	0.000

Make-Up Work

Any assignment can be obtained from the instructor or on blackboard. Unit tests can only be made up by special arrangement with the instructor. Make-up tests will be granted on an individual basis only following a conference with the instructor; where the reason(s) for missing the test must be determined mitigating circumstances beyond the control of the student such as, illness, death in the family, or change in condition of employment. If two tests are missing during the semester and/or if the final exam is missed the student will receive an “F” grade if he or she is failing other parts of the course or an “I” if the student is passing all other parts of the course.

Revisions to the Syllabus

Students are responsible for learning all of the objectives and all of the items in the course outline whether they are discussed in lecture, and/or lab or not. The instructor reserves the right to revise the objectives, topic outline, or academic schedule contained in the syllabus without notice. However, if the revisions affect scheduled unit tests, a 48-hour notice will be given for the new test date.

Technology

Cellular phones and beepers are only allowed in class or lab if they are turned off or in silent mode. Under no circumstances are phones to be answered in class. When there are extenuating circumstances that require that a student be available by phone or beeper, that

student must speak to the instructor prior to class, so that together they can arrive at an agreement.

Special Notice

If you have a visible or hidden disability which may require classroom, lab and/or test-taking modifications, please see me as soon as possible. If you have not registered with Chris Scarborough, learning specialist or a counselor in the Student Services Development Center, you must do so early in the semester.

Course Outcomes

Upon completion of the course the student will have:

1. Knowledge to describe the normal acute responses to cardiovascular exercise.
2. Knowledge of the physiologic adaptations that occur at rest and during submaximal and maximal exercise following chronic aerobic and anaerobic exercise training.
3. Knowledge of blood pressure responses associated with acute exercise, including changes in body position.
4. Knowledge of the unique physiologic considerations of children, older adults, persons with diabetes (type 2), pregnant women, and persons who are overweight and/or obese.
5. Knowledge of the components of health/medical history
6. Knowledge of the categories of participants who should receive medical clearance before administration of an exercise test or participation in an exercise program.
7. Knowledge of relative and absolute contraindications to exercise testing or participation.
8. Knowledge of the limitations of informed consent and medical clearance.
9. Knowledge of the advantages/disadvantages and limitations of the various body composition techniques including, but not limited to, skinfolds, bioelectrical impedance, and circumference measurements.
10. Skill in accurately measuring heart rate and obtaining rating of perceived exertion (RPE) at rest and during exercise according to established guidelines.
11. Ability to locate body sites for circumference (girth) measurements.
12. Ability to obtain a basic health history and risk appraisal and to stratify risk in accordance with ACSM Guidelines.
13. Ability to explain and obtain informed consent.
14. Knowledge of preactivity fitness testing, including assessments of cardiovascular fitness, muscular strength, muscular endurance, flexibility, and body composition.
15. Knowledge of criteria for terminating a fitness evaluation and proper procedures to be followed after discontinuing such a test.
16. Knowledge of and ability to describe the unique adaptations to exercise training with regard to strength, functional capacity, and motor skills.

17. Knowledge of selecting appropriate training modalities according to the age and functional capacity of the individual.
18. Knowledge of the recommended intensity, duration, frequency, and type of physical activity necessary for development of cardiorespiratory fitness in an apparently healthy population
19. Knowledge off the principles of overload, specificity , and progression and how they relate to exercise programming.
20. Knowledge of the importance and ability to record exercise sessions and performing periodic evaluations to assess changes in fitness status.
21. Knowledge of the concept of activities of daily living (ADLs) and its importance in the overall health of the individual.
22. Skill in the use of various methods for establishing and monitoring levels of exercise intensity, including heart rate, RPE, and metabolic equivalents (METs).
23. Knowledge of and ability to apply methods used to monitor exercise intensity, including heart rate and rating of perceived exertion.
24. Ability to differentiate between the amount of physical activity required for health benefits and the amount of exercise required for fitness development.
25. Ability to determine training heart rates using two methods: percent of age-predicted maximum heart rate and heart rate reserve (Karvonen).
26. Ability to explain and implement exercise prescription guidelines for apparently healthy clients or those who have medical clearance to exercise.
27. Ability to adapt frequency, intensity, duration, mode, progression, level of supervision, and monitoring techniques in exercise programs for apparently healthy clients or those who have medical clearance to exercise.
28. Ability to evaluate, prescribe, and demonstrate appropriate flexibility exercises for all major muscle groups.
29. Ability to apply training principles so as to distinguish goals between an athlete and an individual exercising for general health.
30. Knowledge of the risk-factor concept of coronary artery disease (CAD) and the influence of heredity and lifestyle on the development of CAD.
31. Knowledge of how lifestyle factors-including nutrition, physical activity, and heredity-influence blood lipid and lipoprotein profiles.
32. Knowledge of cardiovascular risk factors or conditions that may require consultation with medical personnel before testing or training.
33. Knowledge of respiratory risk factors or conditions that may require consultation with medical personnel before testing or training.
34. Knowledge of metabolic risk factors or conditions that may require consultation with medical personnel before testing or training.

Course Outline

Date	topic	Assignment
9/1	Introduction, Physical activity and disease	chapter 1
9/8	Health & lifestyle evaluation	chapter 2
	Assessing HR/BP/ECG	chapter 2
	Lab 1: Measurement of heart rate & blood pressure	
9/15	Principles of physical fitness testing	chapter 3
	Principles of exercise prescription	chapter 3
9/22	Guidelines for graded exercise testing (GXT)	chapter 4
	Conducting maximal graded exercise tests	chapter 4
	Lab 2: Demonstration of treadmill maximal (GXT)	
	Submaximal graded exercise testing (GXT)	chapter 4
	Conducting submaximal graded exercise tests	chapter 4
	make-up /CR field tests	chapter 4
9/27	****Part I project Due****	
	Lab 3: Demo of cycle ergometer submaximal GXT	
10/6	**Exam I**	
10/13	Designing aerobic exercise programs	chapter 5
10/13	Body Composition models	chapter 8
	Hydrodensitometry/skinfold method	chapter 8
	Lab 4: Demonstration of hydrostatic weighing	
10/20	Lab 5: skinfold method	
	BIA method	chapter 8

10/18	**Part II project due **	
	Circumferences and skeletal diameters	chapter 8
10/27	Weight management principles and practices	chapter 9
	Lab 6 : other anthropometric methods and BIA	
	Assessing energy intake, needs, and expenditure	chapter 9
	Designing weight-loss programs	chapter 9
	Designing weight-gain programs	chapter 9
	Designing programs to improve body composition	chapter 9
	Lab 7	
11/3	**Exam 2**	
11/5	Assessing muscular fitness	chapter 6
11/10	Designing resistance training programs	chapter 7
	Designing resistance training programs (cont.)	chapter 7
	Lab 8: muscular fitness assessment	
11/15	**Part III project Due**	
	Effects of resistance training	chapter 7
12/1	Assessing flexibility and designing stretching programs	chapter 10 & 11
12/8	Assessing balance	chapter 12
	Lab 9: flexibility tests and balance tests	
12/15	Low back care and improving balance	chapters 11 & 12
12/13	**Part IV project due**	
12/15	**Exam 4**	