



## INSTITUTIONAL COMPETENCIES MATCHING FORM

### Appendix B

#### Curriculum for Educational Programs in Exercise Sciences

#### Performance Domains and Associated Competencies

The curriculum for programs in Exercise Sciences must include the performance domains and associated competencies listed below.

Performance Domains and Associated Competencies		Course prefix, number and name
<b>DOMAIN I: HEALTH AND FITNESS ASSESSMENT</b> <b>A. Administer and interpret preparticipation health screening procedures to maximize client safety and minimize risk.</b>		Example Course Title: MOV 304 Physiology of Activity
I.A.1.a	a) Knowledge of pre-activity screening procedures and tools that provide accurate information about the individual's health/medical history, current medical conditions, risk factors, sign/symptoms of disease, current physical activity habits, and medications.	EXSC 395- Exercise Testing Lab, EXSC 453- Exercise Testing & Prescription EXSC 465-Ex Special Health Populations
I.A.1.b	b) Knowledge of the key components included in informed consent and health/medical history.	EXSC 395- Exercise Testing Lab, EXSC 453- Exercise Testing & Prescription EXSC 465-Ex Special Health Populations
I.A.1.c	c) Knowledge of the limitations of informed consent and health/medical history.	EXSC 395- Exercise Testing Lab, EXSC 453- Exercise Testing & Prescription EXSC 465-Ex Special Health Populations
<b>DOMAIN I: HEALTH AND FITNESS ASSESSMENT</b> <b>B. Determine client's readiness to participate in a health-related physical fitness assessment and exercise program.</b>		

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I.B.1.a	a) Knowledge of risk factor thresholds for Industry Standard risk stratification including genetic and lifestyle factors related to the development of CVD.	EXSC 200- Health Promotion EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- Ex Special Health Populations
I.B.1.b	b) Knowledge of the major signs or symptoms suggestive of cardiovascular, pulmonary and metabolic disease.	EXSC 200- Health Promotion EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- Ex Special Health Populations
I.B.1.c	c) Knowledge of cardiovascular risk factors or conditions that may require consultation with medical personnel prior to exercise testing or training (e.g., inappropriate changes in resting heart rate and/or blood pressure, new onset discomfort in chest, neck, shoulder, or arm, changes in the pattern of discomfort during rest or exercise, fainting, dizzy spells, claudication).	EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- Ex Special Health Populations
I.B.1.d	d) Knowledge of the pulmonary risk factors or conditions than may require consultation with medical personnel prior to exercise testing or training (e.g., asthma, exercise-induced asthma/bronchospasm, and extreme breathlessness at rest or during exercise, chronic bronchitis, emphysema).	EXSC 453- Exercise Testing & Prescription EXSC 465- Ex Special Health Populations
I.B.1.e	e) Knowledge of the metabolic risk factors or conditions than may require consultation with medical personnel prior to exercise testing or training (e.g., obesity, metabolic syndrome, diabetes or glucose intolerance, hypoglycemia).	EXSC 453- Exercise Testing & Prescription EXSC 465- Ex Special Health Populations
I.B.1.f	f) Knowledge of the musculoskeletal risk factors or conditions than may require consultation with medical personnel prior to exercise testing or training (e.g., acute or chronic pain, osteoarthritis, rheumatoid arthritis, osteoporosis, inflammation/pain, low back pain).	EXSC 453- Exercise Testing & Prescription EXSC 465- Ex Special Health Populations
I.B.1.g	g) Knowledge of Industry Standard risk stratification categories and their implications for medical clearance before administration of an exercise test or participation in an exercise program.	EXSC 453- Exercise Testing & Prescription EXSC 465- Ex Special Health Populations
I.B.1.h	h) Knowledge of risk factors that may be favorably modified by physical activity habits.	EXSC 200- Health Promotion EXSC 453- Exercise Testing & Prescription EXSC 465- Ex Special Health Populations
I.B.1.i	i) Knowledge of medical terminology including, but not limited to, total cholesterol (TC), high-density lipoprotein cholesterol (HDL-C), low-density lipoprotein cholesterol (LDL-C), triglycerides, impaired fasting glucose, impaired glucose tolerance, hypertension, atherosclerosis, myocardial infarction, dyspnea, tachycardia, claudication, syncope and ischemia.	EXSC 200- Health Promotion EXSC 453- Exercise Testing & Prescription EXSC 465- Ex Special Health Populations

I.B.1.j	j) Knowledge of recommended plasma cholesterol levels for adults based on National Cholesterol Education Program/ATP Guidelines.	EXSC 200- Health Promotion EXSC 453- Exercise Testing & Prescription EXSC 465- Ex Special Health Populations
I.B.1.k	k) Knowledge of recommended blood pressure levels for adults based on National High Blood Pressure Education Program Guidelines.	EXSC 200- Health Promotion EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- Ex Special Health Populations
I.B.1.l	l) Knowledge of recommendations for medical clearance before initiating an exercise program.	EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- Ex Special Health Populations
I.B.1.m	m) Knowledge of the components of a health-history questionnaire (e.g., past and current medical history, family history of cardiac disease, orthopedic limitations, prescribed medications, activity patterns, nutritional habits, stress and anxiety levels, and smoking and alcohol use).	EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- Ex Special Health Populations
I.B.2.a	n) Skill in the risk stratification of participants using CVD risk factor thresholds, major signs or symptoms suggestive of cardiovascular, pulmonary, or metabolic disease, and/or the presence of known cardiovascular, pulmonary, and metabolic disease status.	EXSC 453- Exercise Testing & Prescription EXSC 465- Ex Special Health Populations
I.B.2.b	o) Skill in reviewing pre-activity screening documents to determine the need for medical clearance prior to exercise and to select appropriate physical fitness assessment protocols.	EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- Ex Special Health Populations
<b>DOMAIN I: HEALTH AND FITNESS ASSESSMENT</b> <b>C. Determine and administer physical fitness assessments for apparently healthy clients and those with controlled disease.</b>		
I.C.1.a	Knowledge of the physiological basis of the components of health-related physical fitness (cardiorespiratory fitness, muscular strength, muscular endurance, flexibility, body composition).	EXSC 200- Health Promotion EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- Ex Special Health Populations
I.C.1.b	Knowledge of selecting the most appropriate testing protocols for each participant based on preliminary screening data.	EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- Ex Special Health Populations

I.C.1.c	Knowledge of calibration techniques and proper use of fitness testing equipment.	EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription
I.C.1.d	Knowledge of the purpose and procedures of fitness testing protocols for the components of health related fitness.	EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription
I.C.1.e	Knowledge of test termination criteria and proper procedures to be followed after discontinuing health fitness tests.	EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- Ex Special Health Populations
I.C.1.f	Knowledge of fitness assessment sequencing.	EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- Ex Special Health Populations
I.C.1.g	Knowledge of the effects of common medications and substances on exercise testing (e.g., antianginals, antihypertensives, antiarrhythmics, bronchodilators, hypoglycemics, psychotropics, alcohol, diet pills, cold tablets, caffeine, nicotine).	EXSC 380 Sports Nutrition EXSC 453- Exercise Testing & Prescription EXSC 465- Ex Special Health Populations
I.C.1.h	Knowledge of the physiologic and metabolic responses to exercise testing associated with chronic diseases and conditions (e.g., heart disease, hypertension, diabetes mellitus, obesity, pulmonary disease).	EXSC 453- Exercise Testing & Prescription EXSC 465- Ex Special Health Populations
I.C.2.a	Skill in analyzing and interpreting information obtained from assessment of the components of health related fitness.	EXSC 453- Exercise Testing & Prescription EXSC 465- Ex Special Health Populations
I.C.2.b	Skill in modifying protocols and procedures for testing children, adolescents, older adults and individuals with special considerations.	EXSC 453- Exercise Testing & Prescription EXSC 465- Ex Special Health Populations
<b>DOMAIN I: HEALTH AND FITNESS ASSESSMENT</b>		
<b>D. Conduct and interpret cardiorespiratory fitness assessments.</b>		
I.D.1.a	Knowledge of common submaximal and maximal cardiorespiratory fitness assessment protocols.	EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations

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I.D.1.b	Knowledge of blood pressure measurement techniques.	EXSC 260- Strength Training EXSC 352- Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription
I.D.1.c	Knowledge of Korotkoff sounds for determining systolic and diastolic blood pressure.	EXSC 260- Strength Training EXSC 352- Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription
I.D.1.d	Knowledge of the blood pressure response to exercise.	EXSC 352- Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 453 -Exercise Testing & prescription EXSC 465- Ex Special Health Populations
I.D.1.e	Knowledge of techniques of measuring heart rate and heart rate response to exercise.	EXSC 260- Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
I.D.1.f	Knowledge of the rating of perceived exertion (RPE).	EXSC 352- Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
I.D.1.g	Knowledge of heart rate, blood pressure and RPE monitoring techniques before, during, and after cardiorespiratory fitness testing.	EXSC 352- Physiology of Exercise EXSC 395- Exercise Testing Labs EXSC 453- Exercise Testing & Prescription EXSC 465- Ex Special Health Populations

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I.D.1.h	Knowledge of the anatomy and physiology of the cardiovascular and pulmonary systems.	BIOL 234- Anatomy & Physiology II EXSC 200- Health Promotion EXSC 352- Physiology of Exercise EXSC 411- Cardiovascular Physiology EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
I.D.1.i	Knowledge of cardiorespiratory terminology including angina pectoris, tachycardia, bradycardia, arrhythmia, and hyperventilation.	BIOL 234- Anatomy & Physiology II EXSC 352- Physiology of Exercise EXSC 411- Cardiovascular Physiology EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Population
I.D.1.j	Knowledge of the pathophysiology of myocardial ischemia, myocardial infarction, stroke, hypertension, and hyperlipidemia.	BIOL 234- Anatomy & Physiology II EXSC 411- Cardiovascular Physiology EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
I.D.1.k	Knowledge of the effects of myocardial ischemia, myocardial infarction, hypertension, claudication, and dyspnea on cardiorespiratory responses during exercise.	EXSC 352- Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
I.D.1.l	Knowledge of oxygen consumption dynamics during exercise (e.g., heart rate, stroke volume, cardiac output, ventilation, ventilatory threshold).	EXSC 352- Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 411- Cardiovascular Physiology EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations

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I.D.1.m	Knowledge of methods of calculating $VO_{2max}$ .	EXSC 352 Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Population
I.D.1.n	Knowledge of cardiorespiratory responses to acute graded exercise of conditioned and unconditioned participants.	EXSC 352 Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Population
I.D.2.a	Skill in analyzing and documenting cardiorespiratory fitness test results.	EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Population
I.D.2.b	Skill in locating anatomic landmarks for palpation of peripheral pulses and blood pressure.	EXSC 200- Health Promotion EXSC 352- Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations BIOL 234- Anatomy & Physiology II
I.D.2.c	Skill in measuring heart rate, blood pressure, and RPE at rest and during exercise.	EXSC 260- Strength Training EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription
I.D.2.d	Skill in conducting submaximal exercise tests (e.g., cycle ergometer, treadmill, field testing, step test).	EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription
I.D.2.e	Skill in determining cardiorespiratory fitness based on submaximal exercise test results.	EXSC 352- Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
<b>DOMAIN I: HEALTH AND FITNESS ASSESSMENT</b> <b>E. Conduct and interpret assessments of muscular strength, muscular endurance, and flexibility..</b>		

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I.E.1.a	Knowledge of common muscular strength, muscular endurance, and flexibility assessment protocols.	EXSC 200- Health Promotion EXSC 352- Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
I.E.1.b	Knowledge of interpreting muscular strength, muscular endurance, and flexibility assessments.	EXSC 200- Health Promotion EXSC 352- Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
I.E.1.c	Knowledge of relative strength, absolute strength, and repetition maximum (1-RM) estimation.	EXSC 200- Health Promotion EXSC 260- Strength Training EXSC 351- Kinesiology EXSC 352- Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
I.E.1.d	Knowledge of the anatomy of bone, skeletal muscle, and connective tissues.	BIOL 233- Anatomy & Physiology I EXSC 200- Health Promotion EXSC 260- Strength Training EXSC 351- Kinesiology EXSC 352- Physiology of Exercise EXSC 465-EX Special Health Populations



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I.E.1.e	Knowledge of the definition of the following terms: anterior, posterior, proximal, distal, inferior, superior, medial, lateral, supination, pronation, flexion, extension, adduction, abduction, hyperextension, rotation, circumduction, agonist, antagonist, and stabilizer..	BIOL 233- Anatomy & Physiology I EXSC 260- Strength Training EXSC 351- Kinesiology EXSC 352- Physiology of Exercise EXSC 411- Cardiovascular Physiology EXSC 453- Exercise Testing & Prescription
I.E.1.f	Knowledge of the planes and axes in which each movement action occurs.	BIOL 233- Anatomy & Physiology I EXSC 351- Kinesiology
I.E.1.g	Knowledge of the interrelationships among center of gravity, base of support, balance, stability, posture, and proper spinal alignment.	EXSC 260- Strength Training EXSC 351- Kinesiology
I.E.1.h	Knowledge of the normal curvatures of the spine and common assessments of postural alignment.	BIOL 233- Anatomy & Physiology I EXSC 200- Health Promotion EXSC 351- Kinesiology
I.E.1.i	Knowledge of the location and function of the major muscles (e.g., pectoralis major, trapezius, latissimus dorsi, biceps, triceps, rectus abdominus, internal and external obliques, erector spinae, gluteus maximus, quadriceps, hamstrings, adductors, abductors, and gastrocnemius).	BIOL 233- Anatomy & Physiology I EXSC 260- Strength Training EXSC 351- Kinesiology EXSC 453- Exercise Testing & Prescription
I.E.1.j	Knowledge of the major joints and their associated movement.	BIOL 233- Anatomy & Physiology I EXSC 351- Kinesiology
I.E.2.a	Skill in identifying the major bones, muscles, and joints.	BIOL 233- Anatomy & Physiology I EXSC 351- Kinesiology
I.E.2.b	Skill in conducting assessments of muscular strength, muscular endurance and flexibility (e.g., 1-RM, hand grip dynamometer, push-ups, curl-ups, sit-and-reach).	EXSC 260- Strength Training EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription
I.E.2.c	Skill in estimating 1-RM using lower resistance (2-10 RM).	EXSC 260- Strength Training

I.E.2.d	Skill in interpreting results of muscular strength, muscular endurance and flexibility assessments.	EXSC 260- Strength Training EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription
<b>DOMAIN I: HEALTH AND FITNESS ASSESSMENT</b>		
<b>F. Conduct and interpret anthropometric and body composition assessments.</b>		
I.F.1.a	Knowledge of the advantages, disadvantages and limitations of body composition techniques (e.g., air displacement plethysmography (BOD POD <sup>®</sup> ), dual-energy x-ray absorptiometry (DEXA), hydrostatic weighing, skinfolds, and bioelectrical impedance.	EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription
I.F.1.b	Knowledge of the standardized descriptions of circumference and skinfold sites.	EXSC 395,453EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription
I.F.1.c	Knowledge of procedures for determining BMI and taking skinfold and circumference measurements.	EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription
I.F.1.d	Knowledge of the health implications of variation in body fat distribution patterns and the significance of BMI, waist circumference, and waist-to-hip ratio.	EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription
I.F.2.a	Skill in locating anatomic landmarks for skinfold and circumference measurements.	EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription
I.F.2.b	Skill in analyzing and documenting the results of anthropometric and body composition assessments. .	EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription
<b>DOMAIN II: EXERCISE PRESCRIPTION AND IMPLEMENTATION</b>		
<b>A. Determine safe and effective exercise programs to achieve desired outcomes and goals, and translate assessment results into appropriate exercise prescriptions..</b>		
II.A.1.a	Knowledge of strength-, aerobic-, and flexibility-based exercise.	EXSC 260- Strength Training EXSC 298- Group Exercise Instruction EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465-EX Special Health Populations

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II.A.1.b	Knowledge of the benefits and precautions associated with exercise training in apparently healthy participants and those with controlled disease.	EXSC 260- Strength Training EXSC 298- Group Exercise Instruction EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465-EX Special Health Populations
II.A.1.c	Knowledge of program development for specific client needs (e.g., sport specific training, performance, health, lifestyle, functional ability, balance, agility, aerobic, anaerobic).	EXSC 200- Health Promotion EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465-EX Special Health Population
II.A.1.d	Knowledge of the six motor skill related physical fitness components; agility, balance, coordination, reaction time, speed, and power.	EXSC 200- Health Promotion EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465-EX Special Health Population
II.A.1.e	Knowledge of the physiologic changes associated with an acute bout of exercise.	EXSC 352- Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.A.1.f	Knowledge of the physiologic adaptations following chronic exercise training.	EXSC 352- Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.A.1.g	Knowledge of Industry Standard exercise prescription guidelines for strength, aerobic, and flexibility based exercise for apparently healthy clients, clients with increased risk, and clients with controlled disease.	EXSC 260- Strength Training EXSC 298- Group Exercise Instruction EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465-EX Special Health Populations

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II.A.1.h	Knowledge of the components and sequencing incorporated into an exercise session (e.g., warm-up, stretching, conditioning or sports related exercise, cool-down).	EXSC 260- Strength Training EXSC 298- Group Exercise Instruction EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465-EX Special Health Populations
II.A.1.i	Knowledge of the physiological principles related to warm-up and cool-down.	EXSC 352- Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.A.1.j	Knowledge of the principles of reversibility, progressive overload, individual differences and specificity of training, and how they relate to exercise prescription.	EXSC 200- Health Promotion EXSC 260- Strength Training EXSC 298- Group Exercise Instruction EXSC 352- Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.A.1.k	Knowledge the role of aerobic and anaerobic energy systems in the performance of various physical activities.	EXSC 200- Health Promotion EXSC 352- Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.A.1.l	Knowledge of the basic biomechanical principles of human movement.	EXSC 351- Kinesiology EXSC 352- Physiology of Exercise
II.A.1.m	Knowledge of the psychological and physiological signs and symptoms of overtraining.	EXSC 200- Health Promotion EXSC 352- Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription

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II.A.1.n	Knowledge of the signs and symptoms of common musculoskeletal injuries associated with exercise (e.g., sprain, strain, bursitis, and tendonitis).	EXSC 200- Health Promotion EXSC 260- Strength Training EXSC 298- Group Exercise Instruction EXSC 351- Kinesiology EXSC 352-Physiology of Exercise
II.A.1.o	Knowledge of the advantages and disadvantages of exercise equipment (e.g., free weights, selectorized machines, aerobic equipment).	EXSC 260- Strength Training EXSC 298- Group Exercise Instruction EXSC 395- Exercise Testing Lab EXSC 451- Professional Development in Exercise Science EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.A.2.a	Skill in teaching and demonstrating exercises.	EXSC 260- Strength Training EXSC 298- Group Exercise Instruction EXSC 395-Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.A.2.b	Skill in designing safe and effective training programs.	EXSC 260- Strength Training EXSC 298- Group Exercise Instruction EXSC 395-Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.A.2.c	Skill in implementing exercise prescription guidelines for apparently healthy clients, clients with increased risk, and clients with controlled disease.	EXSC 260- Strength Training EXSC 298- Group Exercise Instruction EXSC 395-Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations

DOMAIN II: EXERCISE PRESCRIPTION AND IMPLEMENTATION		
B. Implement cardiorespiratory exercise prescriptions for apparently healthy clients and those with controlled disease based on current health status, fitness goals and availability of time		
II.B.1.a	Knowledge of the recommended Industry Standard exercise prescription framework for the development of cardiorespiratory fitness.	EXSC 200-Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.B.1.b	Knowledge of the benefits, risks and contraindications of a wide variety of cardiovascular training exercises based on client experience, skill level, current fitness level and goals.	EXSC 200- Physiology of Exercise EXSC 298- Group Exercise Instruction EXSC 352- Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.B.1.c	Knowledge of the minimal threshold of physical activity required for health benefits and/or fitness development.	EXSC 200- Physiology of Exercise EXSC 298- Group Exercise Instruction EXSC 352- Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.B.1.d	Knowledge of determining exercise intensity using HRR, VO <sub>2</sub> R, peak HR method, peak VO <sub>2</sub> method, peak METs method, and the RPE Scale.	EXSC 352- Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.B.1.e	Knowledge of the accuracy of HRR, VO <sub>2</sub> R, peak HR method, peak VO <sub>2</sub> method, peak METs method, and the RPE Scale.	EXSC 352- Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations

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II.B.1.f	Knowledge of abnormal responses to exercise (e.g., hemodynamic, cardiac, ventilatory).	EXSC 352- Physiology of Exercise EXSC 298 -Group Exercise Instruction EXSC 453- Exercise Testing & Prescription EXSC 495- Internship
II.B.1.g	Knowledge of metabolic calculations (e.g., unit conversions, deriving energy cost of exercise, caloric expenditure).	EXSC 352- Physiology of Exercise EXSC 453- Exercise Testing & Prescription
II.B.1.h	Knowledge of calculating the caloric expenditure of an exercise session (kcal-session <sup>1</sup> ).	EXSC 352- Physiology of Exercise EXSC 453- Exercise Testing & Prescription
II.B.1.i	Knowledge of methods for establishing and monitoring levels of exercise intensity, including heart rate, RPE, and METs.	EXSC 200- Health Promotion EXSC 298- Group Exercise Instruction EXSC 352- Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.B.1.j	Knowledge of the applications of anaerobic training principles.	EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.B.1.k	Knowledge of the anatomy and physiology of the cardiovascular and pulmonary systems including the basic properties of cardiac muscle.	BIOL 234- Anatomy & Physiology II EXSC 200- Health Promotion EXSC 352- Physiology of Exercise EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.B.1.l	Knowledge of the basic principles of gas exchange.	EXSC 352-Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations

II.B.2.a	Skill in determining appropriate exercise frequency, intensity, time and type for clients with various fitness levels.	EXSC 298- Group Exercise Instruction EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.B.2.b	Skill in determining the energy cost, absolute and relative oxygen costs (VO <sub>2</sub> ), and MET levels of various activities and applying the information to an exercise prescription.	EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.B.2.c	Skill in identifying improper technique in the use of cardiovascular equipment.	EXSC 298- Group Exercise Instruction EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription
II.B.2.d	Skill in teaching and demonstrating the use of a variety of cardiovascular exercise equipment.	EXSC 298- Group Exercise Instruction EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription
<b>DOMAIN II: EXERCISE PRESCRIPTION AND IMPLEMENTATION</b> <b>C. Implement exercise prescriptions for flexibility, muscular strength, muscular endurance, balance, agility, and reaction time for apparently healthy clients and those with controlled disease based on current health status, fitness goals and availability of time.</b>		
II.C.1.a	Knowledge of the recommended Industry Standard exercise prescription framework for the development of muscular strength, muscular endurance and flexibility.	EXSC 200- Health Promotion EXSC 260- Strength Training EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.C.1.b	Knowledge of the minimal threshold of physical activity required for health benefits and/or fitness development.	EXSC 200- Health Promotion EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations



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II.C.1.c	Knowledge of safe and effective exercises designed to enhance muscular strength and/or endurance of major muscle groups.	EXSC 200- Health Promotion EXSC 260- Strength Training EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.C.1.d	Knowledge of safe and effective stretches that enhance flexibility.	EXSC 200- Health Promotion EXSC 260- Strength Training EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.C.1.e	Knowledge of indications for water based exercise (e.g., arthritis, obesity).	EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.C.1.f	Knowledge of the types of resistance training programs (e.g., total body, split routine) and modalities (e.g., free weights, variable resistance equipment, pneumatic machines, bands).	EXSC 200- Health Promotion EXSC 260- Strength Training EXSC 453- Exercise Testing & Prescription
II.C.1.g	Knowledge of acute (e.g., load, volume, sets, repetitions, rest periods, order of exercises) and chronic training variables (e.g., periodization).	EXSC 200- Health Promotion EXSC 260- Strength Training EXSC 453- Exercise Testing & Prescription
II.C.1.h	Knowledge of the types of muscle contractions (e.g., eccentric, concentric, isometric).	EXSC 200- Health Promotion EXSC 260- Strength Training EXSC 351- Kinesiology EXSC 453- Exercise Testing & Prescription
II.C.1.i	Knowledge of joint movements (e.g., flexion, extension, adduction, abduction) and the muscles responsible for them.	BIOL 233- Anatomy & Physiology I EXSC 260- Strength Training EXSC 351- Kinesiology

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II.C.1.j	Knowledge of acute and delayed onset muscle soreness (DOMS).	EXSC 200- Health Promotion EXSC 260-Strength Training EXSC 351- Kinesiology EXSC 352- Physiology of Exercise
II.C.1.k	Knowledge of the anatomy and physiology of skeletal muscle fiber, the characteristics of fast-and slow-twitch muscle fibers, and the sliding filament theory of muscle contraction.	BIOL 233- Anatomy & Physiology I EXSC 260- Strength Training EXSC 351- Kinesiology EXSC 351- Kinesiology
II.C.1.l	Knowledge of the stretch reflex, proprioceptors, golgi tendon organ (GTO), muscle spindles, and how they relate to flexibility.	BIOL 233- Anatomy & Physiology I EXSC 351- Kinesiology EXSC 352- Physiology of Exercise
II.C.1.m	Knowledge of muscle-related terminology including atrophy, hyperplasia, hypertrophy.	EXSC 260- Strength Training
II.C.1.n	Knowledge of the Valsalva maneuver and its implications during exercise.	EXSC 260- Strength Training EXSC 351- Kinesiology EXSC 453- Exercise Testing & Prescription
II.C.1.o	Knowledge of the physiology underlying plyometric training and common plyometric exercises (e.g., box jumps, leaps, bounds).	EXSC 260- Strength Training EXSC 298- Group Exercise Instruction, EXSC 453-Exercise Testing & Prescription
II.C.1.p	Knowledge of the contraindications and potential risks associated with muscular conditioning activities (e.g., straight-leg sit-ups, double leg raises, squats, hurdler's stretch, yoga plough, forceful back hyperextension, and standing bent-over toe touch, behind neck press/lat pull-down).	EXSC 260- Strength Training EXSC 298- Group Exercise Instruction, EXSC 453-Exercise Testing & Prescription
II.C.1.q	Knowledge of spotting positions and techniques for injury prevention and exercise assistance.	EXSC 260- Strength Training
II.C.1.r	Knowledge of periodization (e.g., macro, micro, mesocycles) and associated theories.	EXSC 260-Strength Training EXSC 453- Exercise Testing & Prescription
II.C.1.s	Knowledge of safe and effective Olympic weight lifting exercises.	EXSC 260-Strength Training EXSC 453- Exercise Testing & Prescription

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II.C.1.t	Knowledge of safe and effective core stability exercises (e.g., planks, crunches, bridges, cable twists).	EXSC 260- Strength Training EXSC 298- Group Exercise Instruction EXSC 453- Exercise Testing & Prescription
II.C.2.a	Skill in identifying and correcting improper technique in the use of resistive equipment (e.g., stability balls, weights, bands, resistance bars, water exercise equipment).	EXSC 260- Strength Training EXSC 298- Group Exercise Instruction EXSC 453- Exercise Testing & Prescription
II.C.2.b	Skill in teaching and demonstrating appropriate exercises for enhancing musculoskeletal flexibility.	EXSC 260- Strength Training EXSC 453- Exercise Testing & Prescription
II.C.2.c	Skill in teaching and demonstrating safe and effective muscular strength and endurance exercises (e.g., free weights, weight machines, resistive bands, Swiss balls, body weight and all other major fitness equipment).	EXSC 260- Strength Training EXSC 453- Exercise Testing & Prescription
II.C.2.d	Skill in prescribing exercise using the calculated % 1-RM.	EXSC 260- Strength Training EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription
<b>DOMAIN II: EXERCISE PRESCRIPTION AND IMPLEMENTATION</b> <b>D. Establish exercise progression guidelines for flexibility, muscular strength, muscular endurance, balance, agility, and reaction time for apparently healthy clients and those with controlled disease based on current health status, fitness goals and availability of time.</b>		
II.D.1.a	Knowledge of the basic principles of exercise progression.	EXSC 260- Strength Training EXSC 298- Group Exercise Instruction EXSC 453- Exercise Testing & Prescription
II.D.1.b	Knowledge of adjusting the exercise prescription framework in response to individual changes in conditioning.	EXSC 260- Strength Training EXSC 298- Group Exercise Instruction EXSC 453- Exercise Testing & Prescription
II.D.1.c	Knowledge of the importance of performing periodic reevaluations to assess changes in fitness status.	EXSC 200- Health Promotion EXSC 260- Strength Training EXSC 298- Group Exercise Instruction EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription

II.D.1.d	Knowledge of the training principles that promote improvements in muscular strength, muscular endurance, cardiorespiratory fitness, and flexibility.	EXSC 200- Health Promotion EXSC 260- Strength Training EXSC 298- Group Exercise Instruction EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription
II.D.2.a	Skill in recognizing the need for progression and communicating updates to exercise prescriptions.	EXSC 200- Health Promotion EXSC 260- Strength Training EXSC 298- Group Exercise Instruction EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription
<b>DOMAIN II: EXERCISE PRESCRIPTION AND IMPLEMENTATION</b> <b>E. Implement a general weight management program as indicated by personal goals, as needed.</b>		
II.E.1.a	Knowledge of exercise prescriptions for achieving weight related goals, including weight gain, weight loss and weight maintenance.	EXSC 220- Health Promotion EXSC 260- Strength Training EXSC 298- Group Exercise Instruction EXSC 352- Physiology of Exercise EXSC 453- Exercise Testing & Prescription
II.E.1.b	Knowledge of energy balance and basic nutritional guidelines (e.g., MyPyramid, USDA Dietary Guidelines for Americans).	EXSC 200- Health Promotion EXSC 220- Nutrition EXSC 352- Physiology of Exercise
II.E.1.c	Knowledge of weight management terminology including, but not limited to, obesity, overweight, percent fat, BMI, lean body mass (LBM), anorexia nervosa, bulimia, binge eating, metabolic syndrome, body fat distribution, adipocyte, bariatrics, ergogenic aid, fat-free mass (FFM), resting metabolic rate (RMR) and thermogenesis.	EXSC 200- Health Promotion EXSC 220- Nutrition EXSC 352- Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 453-Exercise Testing & Prescription

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II.E.1.d	Knowledge of the relationship between body composition and health.	EXSC 200- Health Promotion EXSC 220- Nutrition EXSC 351- Kinesiology EXSC 380 Sports Nutrition EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription
II.E.1.e	Knowledge of the unique dietary needs of participant populations (e.g., women, children, older adults, pregnant women).	EXSC 220-Nutrition EXSC 380 Sports Nutrition EXSC 453- Exercise Testing & Prescription
II.E.1.f	Knowledge of common nutritional ergogenic aids, their purported mechanisms of action, and associated risks and benefits (e.g., protein/amino acids, vitamins, minerals, herbal products, creatine, steroids, caffeine).	EXSC 220- Nutrition EXSC 380 Sports Nutrition EXSC 453- Exercise Testing & Prescription
II.E.1.g	Knowledge of methods for modifying body composition including diet, exercise, and behavior modification.	EXSC 220- Nutrition EXSC 380 Sports Nutrition EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.E.1.h	Knowledge of fuel sources for aerobic and anaerobic metabolism including carbohydrates, fats and proteins.	EXSC 220- Nutrition EXSC 380 Sports Nutrition EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.E.1.i	Knowledge of the effects of overall dietary composition on healthy weight management.	EXSC 220- Nutrition EXSC 380 Sports Nutrition EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.E.1.j	Knowledge of the importance of maintaining normal hydration before, during and after exercise.	EXSC 200- Health Promotion EXSC 220- Nutrition EXSC 380 Sports Nutrition EXSC 453- Exercise Testing & Prescription EXSC 465- Ex Special Health Populations

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II.E.1.k	Knowledge of the consequences of inappropriate weight loss methods (e.g., saunas, dietary supplements, vibrating belts, body wraps, over exercising, very low calorie diets, electric stimulators, sweat suits, fad diets).	EXSC 200- Health Promotion EXSC 220- Nutrition EXSC 380 Sports Nutrition EXSC 453- Exercise Testing & Prescription EXSC 465- Ex Special Health Populations
II.E.1.l	Knowledge of the kilocalorie levels of carbohydrate, fat, protein, and alcohol.	EXSC 200- Health Promotion EXSC 220- Nutrition EXSC 380 Sports Nutrition EXSC 453- Exercise Testing & Prescription
II.E.1.m	Knowledge of the relationship between kilocalorie expenditures and weight loss.	EXSC 200- Health Promotion EXSC 220- Nutrition EXSC 380 Sports Nutrition EXSC 453- Exercise Testing & Prescription
II.E.1.n	Knowledge of published position statements on obesity and the risks associated with it (e.g., National Institutes of Health, American Dietetic Association, ACSM).	EXSC 200- Health Promotion EXSC 220- Nutrition EXSC 380 Sports Nutrition EXSC 453- Exercise Testing & Prescription
II.E.1.o	Knowledge of the relationship between body fat distribution patterns and health.	EXSC 200- Health Promotion EXSC 220- Nutrition EXSC 395- Exercise Testing Lab EXSC 380 Sports Nutrition EXSC 453- Exercise Testing & Prescription
II.E.1.p	Knowledge of the physiology and pathophysiology of overweight and obese clients.	EXSC 200- Health Promotion EXSC 220- Nutrition EXSC 380 Sports Nutrition EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations

II.E.1.q	Knowledge of the recommended exercise prescription framework for participants who are overweight or obese.	EXSC 200- Health Promotion EXSC 220- Nutrition EXSC 380 Sports Nutrition EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.E.1.r	Knowledge of comorbidities and musculoskeletal conditions associated with overweight and obesity that may require medical clearance and/or modifications to exercise testing and prescription.	EXSC 200- Health Promotion EXSC 220- Nutrition EXSC 380 Sports Nutrition EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.E.2.a	Skill in applying behavioral strategies (e.g., exercise, diet, behavioral modification strategies) for weight management.	EXSC 200- Health Promotion EXSC 220- Nutrition EXSC 260- Strength Training EXSC 298-Group Exercise Instruction EXSC Sports and Exercise Psychology EXSC 380 Sports Nutrition EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.E.2.b	Skill in modifying exercises for individuals limited by body size.	EXSC 260- Strength Training EXSC 298-Group Exercise Instructions EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.E.2.c	Skill in calculating the volume of exercise in terms of kcal·session <sup>-1</sup> .	EXSC 220- Nutrition EXSC 298-Group Exercise Instructions EXSC 453- Exercise Testing & Prescription
<p><b>DOMAIN II: EXERCISE PRESCRIPTION AND IMPLEMENTATION</b>  <b>F. Prescribe and implement exercise programs for clients with controlled cardiovascular, pulmonary, and metabolic diseases and other clinical populations and work closely with clients' healthcare providers, as needed..</b></p>		

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II.F.1.a	Knowledge of Industry Standard risk stratification and exercise prescription guidelines for participants with cardiovascular, pulmonary, and metabolic diseases and other clinical populations.	EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.F.1.b	Knowledge of Industry Standard relative and absolute contraindications for initiating exercise sessions or exercise testing, and indications for terminating exercise sessions and exercise testing.	EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.F.1.c	Knowledge of the physiology and pathophysiology of diseases and conditions (e.g., cardiac disease, arthritis, diabetes mellitus, dyslipidemia, hypertension, metabolic syndrome, musculoskeletal injuries, overweight and obesity, osteoporosis, peripheral artery disease, pulmonary disease).	BIOL 234- Anatomy & Physiology II EXSC 200- Health Promotion EXSC 411- Cardiovascular Physiology EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.F.1.d	Knowledge of the effects of diet and exercise on blood glucose levels in diabetics.	EXSC 220- Health Promotion EXSC 380 Sports Nutrition EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.F.1.e	Knowledge of the recommended exercise prescription principles for the development of cardiorespiratory fitness, muscular fitness and flexibility for participants with cardiac disease, arthritis, diabetes mellitus, dyslipidemia, hypertension, metabolic syndrome, musculoskeletal injuries, overweight and obesity, osteoporosis, peripheral artery disease, and pulmonary disease.	EXSC 453- Exercise Testing & Prescription EXSC 465-EX Special Health Populations
II.F.2.a	Skill in progressing exercise programs, according to exercise prescription principles, in a safe and effective manner.	EXSC 453- Exercise Testing & Prescription EXSC 465-EX Special Health Populations
II.F.2.b	Skill in modifying the exercise prescription and/or exercise choice for clients with diseases and conditions (e.g., cardiac disease, arthritis, diabetes mellitus, dyslipidemia, hypertension, metabolic syndrome, musculoskeletal injuries, overweight and obesity, osteoporosis, peripheral artery disease, pulmonary disease).	EXSC 453- Exercise Testing & Prescription EXSC 465-EX Special Health Populations
II.F.2.c	Skill in identifying improper exercise techniques and modifying exercise programs for participants with low back, neck, shoulder, elbow, wrist, hip, knee and/or ankle pain.	EXSC 260- Strength Training EXSC 298- Group Exercise Instruction EXSC 453- Exercise Testing & Prescription EXSC 465-EX Special Health Populations
<b>DOMAIN II: EXERCISE PRESCRIPTION AND IMPLEMENTATION</b>		
<b>G. Prescribe and implement exercise programs for healthy special populations (i.e., older adults, youth, and pregnant women).</b>		



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II.G.1.a	Knowledge of normal maturational changes across the lifespan and their effects (e.g., skeletal muscle, bone, reaction time, coordination, posture, heat and cold tolerance, maximal oxygen consumption, strength, flexibility, body composition, resting and maximal heart rate, resting and maximal blood pressure).	BIOL 234-Anatomy & Physiology II EXSC 352- Physiology of Exercise EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
II.G.1.b	Knowledge of techniques for the modification of cardiovascular, flexibility, and resistance exercises based on age, functional capacity and physical condition.	EXSC 298- Group Exercise Instruction EXSC 453- Exercise Testing & Prescription EXSC 465-EX Special Health Populations
II.G.1.c	Knowledge of techniques for the development of exercise prescriptions for children, adolescents and older adults with regard to strength, functional capacity, and motor skills.	EXSC 453- Exercise Testing & Prescription EXSC 465-EX Special Health Populations
II.G.1.d	Knowledge of the unique adaptations to exercise training in children, adolescents, and older participants with regard to strength, functional capacity, and motor skills.	EXSC 453- Exercise Testing & Prescription EXSC 465-EX Special Health Populations
II.G.1.e	Knowledge of the benefits and precautions associated with exercise training across the lifespan.	EXSC 453- Exercise Testing & Prescription EXSC 465-EX Special Health Populations
II.G.1.f	Knowledge of the recommended exercise prescription framework for the development of cardiorespiratory fitness, muscular fitness and flexibility in apparently healthy children and adolescents.	EXSC 453- Exercise Testing & Prescription EXSC 465-EX Special Health Populations
II.G.1.g	Knowledge of the effects of the aging process on the musculoskeletal and cardiovascular structures and functions during rest, exercise, and recovery.	EXSC 453- Exercise Testing & Prescription EXSC 465-EX Special Health Populations
II.G.1.h	Knowledge of the recommended exercise prescription framework necessary for the development of cardiorespiratory fitness, muscular fitness, balance, and flexibility in apparently healthy, older adults.	EXSC 453- Exercise Testing & Prescription EXSC 465-EX Special Health Populations
II.G.1.i	Knowledge of common orthopedic and cardiovascular exercise considerations for older adults.	EXSC 453- Exercise Testing & Prescription EXSC 465-EX Special Health Populations
II.G.1.j	Knowledge of the relationship between regular physical activity and the successful performance of activities of daily living (ADLs) for older adults.	EXSC 453- Exercise Testing & Prescription EXSC 465-EX Special Health Populations

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II.G.1.k	Knowledge of the recommended frequency, intensity, type, and duration of physical activity necessary for the development of cardiorespiratory fitness, muscular fitness and flexibility in apparently healthy pregnant women.	EXSC 465- EX Special Health Populations
II.G.2.a	Skill in teaching and demonstrating appropriate exercises for healthy populations with special considerations.	EXSC 453- Exercise Testing & Prescription EXSC 465-EX Special Health Populations
II.G.2.b	Skill in modifying exercises based on age, physical condition, and current health status.	EXSC 453- Exercise Testing & Prescription EXSC 465-EX Special Health Populations
<b>DOMAIN II: EXERCISE PRESCRIPTION AND IMPLEMENTATION</b>		
<b>H. Modify exercise prescriptions based on various environmental conditions.</b>		
II.H.1.a	Knowledge of the effects of various environmental conditions on the physiologic response to exercise (e.g., altitude, variable ambient temperatures, humidity, environmental pollution).	EXSC 200- Health Promotion EXSC 352- Physiology of Exercise EXSC 453- Exercise Testing & Prescription
II.H.1.b	Knowledge of special precautions and program modifications for exercise in various environmental conditions (e.g., altitude, variable ambient temperatures, humidity, environmental pollution).	EXSC 200- Health Promotion EXSC 352- Physiology of Exercise EXSC 453- Exercise Testing & Prescription
II.H.1.c	Knowledge of the role of acclimatization when exercising in various environmental conditions (e.g., altitude, variable ambient temperatures, humidity, environmental pollution).	EXSC 200- Health Promotion EXSC 352- Physiology of Exercise EXSC 453- Exercise Testing & Prescription
II.H.1.d	Knowledge of appropriate fluid intake during exercise in various environmental conditions (e.g., altitude, variable ambient temperatures, humidity, environmental pollution).	EXSC 200- Health Promotion EXSC 352- Physiology of Exercise EXSC 453- Exercise Testing & Prescription
<b>DOMAIN III: EXERCISE COUNSELING AND BEHAVIOR MODIFICATION</b>		
<b>A. Optimize adoption and adherence of exercise and other healthy behaviors by applying effective communication techniques.</b>		

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<p>III.A.1.a</p>	<p>Knowledge of verbal and non-verbal behaviors that communicate positive reinforcement and encouragement (e.g., eye contact, targeted praise, empathy).</p>	<p>EXSC 200- Health Promotion EXSC 260- Strength Training EXSC 298- Group Exercise Instruction EXSC 360 Exercise and Sports Psychology EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing &amp; Prescription EXSC 465- EX Special Health Populations</p>
<p>III.A.1.b</p>	<p>Knowledge of group leadership techniques for working with clients of all ages.</p>	<p>EXSC 200- Health Promotion EXSC 260- Strength Training EXSC 298- Group Exercise Instruction EXSC 453- Exercise Testing &amp; Prescription EXSC 465- EX Special Health Populations</p>
<p>III.A.1.c</p>	<p>Knowledge of learning preferences (auditory, visual, kinesthetic) and how to apply teaching and training techniques to optimize training session.</p>	<p>EXSC 200- Health Promotion EXSC 260- Strength Training EXSC 298- Group Exercise Instruction EXSC 360 Exercise and Sports Psychology EXSC 453- Exercise Testing &amp; Prescription EXSC 465- EX Special Health Populations</p>
<p>III.A.2.a</p>	<p>Skill in applying active listening techniques.</p>	<p>EXSC 200- Health Promotion EXSC 260- Strength Training EXSC 298- Group Exercise Instruction EXSC 360 Exercise and Sports Psychology EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing &amp; Prescription EXSC 465- EX Special Health Populations</p>

III.A.2.b	Skill in using feedback to optimize a client's training sessions.	EXSC 200- Health Promotion EXSC 260- Strength Training EXSC 298- Group Exercise Instruction EXSC 380 Exercise and Sports Psychology EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
III.A.2.c	Skill in effective use of a variety of communication modes (e.g., telephone, newsletters, email, social media).	EXSC 200- Health Promotion EXSC 360 Sports Psychology EXSC 453-Exercise Testing & Prescription
<b>DOMAIN III: EXERCISE COUNSELING AND BEHAVIOR MODIFICATION</b>		
<b>B. Optimize adoption and adherence of exercise and other healthy behaviors by applying effective behavioral strategies and motivational techniques.</b>		
III.B.1.a	Knowledge of behavior change models and theories (e.g., transtheoretical model, social cognitive theory, social ecological model, health belief model, theory of planned behavior, self-determination theory, cognitive evaluation theory).	EXSC 200- Health Promotion EXSC 360 Exercise and Sports Psychology
III.B.1.b	Knowledge of the basic principles involved in motivational interviewing (MI).	EXSC 200- Health Promotion EXSC 360 Exercise and Sports Psychology EXSC 380 Sports Nutrition EXSC 453- Exercise Testing & Prescription
III.B.1.c	Knowledge of intervention strategies and stress management techniques.	EXSC 200-Health Promotion EXSC 360 Exercise and Sports Psychology
III.B.1.d	Knowledge of behavioral strategies to enhance exercise and health behavior change (e.g., reinforcement, S.M.A.R.T. goal setting, social support).	EXSC 200- Health Promotion EXSC 360 Exercise and Sports Psychology EXSC 380 Sports Nutrition EXSC 453- Exercise Testing & Prescription

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III.B.1.e	Knowledge of behavior modification terminology (e.g. self-esteem, self-efficacy, antecedents, cues to action, behavioral beliefs, behavioral intentions, and reinforcing factors).	EXSC 200- Health Promotion EXSC 360 Exercise and Sports Psychology EXSC 380 Sports Nutrition EXSC 453- Exercise Testing & Prescription
III.B.1.f	Knowledge of behavioral strategies (e.g., exercise, diet, behavioral modification strategies) for weight management.	EXSC 200- Health Promotion EXSC 395- Exercise Testing Lab EXSC 380 Sports Nutrition EXSC 453- Exercise Testing & Prescription
III.B.1.g	Knowledge of the role that affect, mood and emotion play in exercise adherence.	EXSC 200- Health Promotion EXSC 298- Group Exercise Instruction EXSC 360 Exercise and Sports Psychology EXSC 380 Sports Nutrition EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
III.B.1.h	Knowledge of barriers to exercise adherence and compliance (e.g., time management, injury, fear, lack of knowledge, weather).	EXSC 200- Health Promotion EXSC 298- Group Exercise Instruction EXSC 360 Exercise and Sports Psychology EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
III.B.1.i	Knowledge of techniques that facilitate intrinsic and extrinsic motivation (e.g., goal setting, incentive programs, achievement recognition, social support).	EXSC 200- Health Promotion EXSC 298- Group Exercise Instruction EXSC 360 Exercise and Sports Psychology EXSC 380 Sports Nutrition EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations

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III.B.1.j	Knowledge of the role extrinsic and intrinsic motivation plays in the adoption and maintenance of behavior change.	EXSC 200- Health Promotion EXSC 298- Group Exercise Instruction EXSC 360 Exercise and Sports Psychology EXSC 380 Sports Nutrition EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
III.B.1.k	Knowledge of health coaching principles and lifestyle management techniques related to behavior change.	EXSC 200- Health Promotion EXSC 298- Group Exercise Instruction EXSC 360 Exercise and Sports Psychology EXSC 380 Sports Nutrition EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
III.B.1.l	Knowledge of strategies that increase non-structured physical activity levels (e.g., stair walking, parking farther away, bike to work).	EXSC 200- Health Promotion EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
III.B.2.a	Skill in explaining the purpose and value of understanding perceived exertion.	EXSC 200- Health Promotion EXSC 298- Group Exercise Instruction EXSC 352- Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465-EX Special Health Populations
III.B.2.b	Skill in using imagery as a motivational tool.	EXSC 200- Health Promotion EXSC 260- Strength Training EXSC 298- Group Exercise Instruction EXSC 352- Physiology of Exercise EXSC 360 Sports Psychology EXSC 453-Exercise Testing & Prescription

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III.B.2.c	Skill in evaluating behavioral readiness to optimize exercise adherence.	EXSC 200- Health Promotion EXSC 453-Exercise Testing & Prescription
III.B.2.d	Skill in applying the theories related to behavior change to diverse populations.	EXSC 200- Health Promotion EXSC 453-Exercise Testing & Prescription EXSC 465- EX Special Health Populations
III.B.2.e	Skill in developing intervention strategies to increase self-efficacy and self-confidence.	EXSC 200- Health Promotion EXSC 360 Exercise and Sports Psychology EXSC 380 Sports Nutrition EXSC 453-Exercise Testing & Prescription EXSC 465- EX Special Health Populations
III.B.2.f	Skill in developing reward systems that support and maintain program adherence.	EXSC 200- Health Promotion EXSC 360 Exercise and Sports Psychology EXSC 380 Sports Nutrition EXSC 453-Exercise Testing & Prescription EXSC 465- EX Special Health Populations
III.B.2.g	Skill in setting effective behavioral goals.	EXSC 200- Health Promotion EXSC 360 Exercise and Sports Psychology EXSC 380 Sports Nutrition EXSC 453-Exercise Testing & Prescription EXSC 465- EX Special Health Populations
<b>DOMAIN III: EXERCISE COUNSELING AND BEHAVIOR MODIFICATION</b> <b>C. Provide educational resources to support clients in the adoption and maintenance of healthy lifestyle behaviors.</b>		
III.C.1.a	Knowledge of the relationship between physical inactivity and common chronic diseases (e.g., Atherosclerosis, type II diabetes, obesity, dyslipidemia, arthritis, low back pain, hypertension).	EXSC 200- Health Promotion EXSC 352- Physiology of Exercise EXSC 360 Exercise and Sports Psychology EXSC 380 Sports Nutrition EXSC 453-Exercise Testing & Prescription EXSC 465- EX Special Health Populations

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III.C.1.b	Knowledge of the dynamic inter-relationship between fitness level, body composition, stress and overall health.	EXSC 200- Health Promotion EXSC 352- Physiology of Exercise EXSC 360 Exercise and Sports Psychology EXSC 380 Sports Nutrition EXSC 395- Exercise Testing Lab, EXSC 453-Exercise Testing & Prescription EXSC 465- EX Special Health Populations
III.C.1.c	Knowledge of modifications necessary to promote healthy lifestyle behaviors for diverse populations.	EXSC 200- Health Promotion EXSC 395- Exercise Testing Lab, EXSC 360 Exercise and Sports Psychology EXSC 380 Sports Nutrition EXSC 453-Exercise Testing & Prescription EXSC 465- EX Special Health Populations
III.C.1.d	Knowledge of stress management techniques and relaxation techniques (e.g., progressive relaxation, guided imagery, massage therapy).	EXSC 200- Health Promotion EXSC 298- Group Exercise Instruction EXSC 360 Sports Psychology EXSC 453-Exercise Testing & Prescription
III.C.1.e	Knowledge of the activities of daily living (ADLs) and how they relate to overall health.	EXSC 200- Health Promotion EXSC 360 Exercise and Sports Psychology EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Population
III.C.1.f	Knowledge of specific, age-appropriate leadership techniques and educational methods to increase client engagement.	EXSC 200- Health Promotion EXSC 298- Group Exercise Instruction EXSC 360 Exercise and Sports Psychology EXSC 453-Exercise Testing & Prescription



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III.C.1.g	Knowledge of community-based exercise programs that provide social support and structured activities (e.g., walking clubs, intramural sports, golf leagues, cycling clubs).	EXSC 200- Health Promotion EXSC 298- Group Exercise Instruction EXSC 360 Exercise and Sports Psychology EXSC 465- EX Special Health Populations
III.C.2.a	Skill in accessing and disseminating scientifically-based, relevant fitness-, nutrition-, and wellness-related resources and information.	EXSC 200- Health Promotion EXSC 350w- Research Methods EXSC 380 Sports Nutrition EXSC 352- Physiology of Exercise EXSC 416- Exercise Metabolism & Pharmacology EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
III.C.2.b	Skill in educating clients about benefits and risks of exercise and the risks of sedentary behavior.	EXSC 200- Health Promotion EXSC 220- Nutrition EXSC 260- Strength Training EXSC 298- Group Exercise Instruction EXSC 352- Physiology of Exercise EXSC 360 Exercise and Sports Psychology EXSC 453- Exercise Testing & Prescription EXSC 465-EX Special Health Populations
<b>DOMAIN III: EXERCISE COUNSELING AND BEHAVIOR MODIFICATION</b> <b>D. Provide support within the scope of practice of a fitness professional and refer to other health professionals as indicated.</b>		
III.D.1.a	Knowledge of the side effects of common over-the-counter and prescription drugs that may impact a client's ability to exercise.	EXSC 200- Health Promotion EXSC 416- Exercise Metabolism & Pharmacology EXSC 380 Sports Nutrition EXSC 411 Cardiovascular Physiology EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations

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III.D.1.b	Knowledge of signs and symptoms of mental health states (e.g., anxiety, depression, eating disorders) that may necessitate referral to a medical or mental health professional.	EXSC 200- Health Promotion EXSC 360 Exercise and Sports Psychology EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
III.D.1.c	Knowledge of symptoms and causal factors of test anxiety (i.e., performance, appraisal threat during exercise testing) and how they may affect physiological responses to testing.	EXSC 200- Health Promotion EXSC 360 Exercise and Sports Psychology EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
III.D.1.d	Knowledge of client needs and learning styles that may impact exercise sessions and exercise testing procedures.	EXSC 352- Physiology of Exercise EXSC 395- Exercise Testing Lab EXSC 360 Exercise and Sports Psychology EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
III.D.1.e	Knowledge of conflict resolution techniques that facilitate communication among exercise cohorts.	EXSC 298- Group Exercise Instruction EXSC 360 Exercise and Sports Psychology EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription
III.D.2.a	Skill in communicating the need for medical, nutritional, or mental health intervention.	EXSC 200- Health Promotion EXSC 360 Exercise and Sports Psychology EXSC 380 Sports Nutrition EXSC 395- Exercise Testing Lab EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
<p><b>DOMAIN IV: RISK MANAGEMENT AND PROFESSIONAL RESPONSIBILITIES</b></p> <p><b>A. Develop and disseminate risk management guidelines for a health/fitness facility to reduce member, employee, and business risk</b></p>		

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IV.A.1.a	Knowledge of employee criminal background checks, child abuse clearances and drug and alcohol screenings.	EXSC 451- Professional Development in Exercise Science and Risk Management
IV.A.1.b	Knowledge of employment verification requirements mandated by state and federal laws.	EXSC 451- Professional Development in Exercise Science and Risk Management
IV.A.1.c	Knowledge of safe handling and disposal of body fluids and employee safety (OSHA guidelines).	EXSC 201- First Aid EXSC 451- Professional Development in Exercise Science and Risk Management
IV.A.1.d	Knowledge of insurance coverage common to the health/fitness industry including general liability, professional liability, workers' compensation, property, and business interruption.	EXSC 451- Professional Development in Exercise Science and Risk Management
IV.A.1.e	Knowledge of sexual harassment policies and procedures.	EXSC 451- Professional Development in Exercise Science and Risk Management
IV.A.1.f	Knowledge of interviewing techniques.	EXSC 451- Professional Development in Exercise Science and Risk Management
IV.A.1.g	Knowledge of basic precautions taken in an exercise setting to ensure client safety.	EXSC 451- Professional Development in Exercise Science and Risk Management
IV.A.1.h	Knowledge of pre-activity screening, medical release and waiver of liability for normal and at-risk participants.	EXSC 201- First Aid EXSC 395- Exercise Testing Lab EXSC 451- Professional Development in Exercise Science EXSC 453- Exercise Testing & Prescription EXSC 465- Ex Rx Special Health Populations
IV.A.1.i	Knowledge of emergency action plan (EAP); response systems and procedures.	EXSC 201-First Aid EXSC 451- Professional Development in Exercise Science and Risk Management

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CLINICAL EXERCISE

IV.A.1.j	Knowledge of the legal implications of documented safety procedures, the use of incident report documents, and ongoing safety training documentation.	EXSC 201-First Aid EXSC 451- Professional Development in Exercise Science and Risk Management
IV.A.1.k	Knowledge of maintaining employee records/documents (CPR/AED certification, certifications for maintaining job position).	EXSC 201-First Aid EXSC 451- Professional Development in Exercise Science and Risk Management
IV.A.1.l	Knowledge of the components for ethical standards and scope of practice in the health/fitness industry.	EXSC 395- Exercise Testing Lab EXSC 451- Professional Development in Exercise Science and Risk Management EXSC -453 Exercise Testing & Prescription
IV.A.2.a	Skill in developing and/or modifying a policies and procedures manual.	EXSC 451- Professional Development in Exercise Science and Risk Management
IV.A.2.b	Skill in enforcing confidentiality policies.	EXSC 451- Professional Development in Exercise Science and Risk Management
IV.A.2.c	Skill in maintaining a safe exercise environment (e.g., equipment operation and regular maintenance schedules, safety and scheduled maintenance of exercise areas, overall facility maintenance, proper sanitation, proper signage).	EXSC 200- Health Promotion EXSC 201- First Aid EXSC 395- Exercise Testing Lab EXSC 451- Professional Development in Exercise Science and Risk Management EXSC 453- Exercise Testing & Prescription
IV.A.2.d	Skill in clearly communicating human resource risk management policies and procedures.	EXSC 451- Professional Development in Exercise Science and Risk Management
IV.A.2.e	Skill in training employees to identify and limit/reduce high risk situations.	EXSC 451- Professional Development in Exercise Science and Risk Management
<b>AIN IV: RISK MANAGEMENT AND PROFESSIONAL RESPONSIBILITIES</b>		
<b>B. Ensure that emergency policies and procedures are in place.</b>		

PART D  
PHYSIOLOGY

CLINICAL EXERCISE

IV.B.1.a	Knowledge of emergency procedures (i.e., telephone procedures, written emergency procedures (EAP), personnel responsibilities) in a health and fitness setting	EXSC 201-First Aid EXSC 451- Professional Development in Exercise Science and Risk Management
IV.B.1.b	Knowledge of the initial management and first-aid procedures for exercise-related injuries (e.g., bleeding, strains/sprains, fractures, shortness of breath, palpitations, hypoglycemia, allergic reactions, fainting/syncope).	EXSC 201-First Aid EXSC 451- Professional Development in Exercise Science and Risk Management
IV.B.1.c	Knowledge of the responsibilities, limitations, and legal implications for the fitness professional of carrying out emergency procedures..	EXSC 201-First Aid EXSC 451- Professional Development in Exercise Science and Risk Management
	Knowledge of safety plans, emergency procedures and first-aid techniques needed during fitness evaluations, exercise testing, and exercise training	EXSC 201-First Aid EXSC 451- Professional Development in Exercise Science and Risk Management
IV.B.1.e	Knowledge of potential musculoskeletal injuries (e.g., contusions, sprains, strains, fractures), cardiovascular/pulmonary complications (e.g., tachycardia, bradycardia, hypotension/hypertension, dyspnea) and metabolic abnormalities (e.g., fainting/syncope, hypoglycemia/hyperglycemia, hypothermia/hyperthermia).	EXSC 200- Health Promotion EXSC 201- First Aid EXSC 411- Cardiovascular Physiology EXSC 453- Exercise Testing & Prescription EXSC 465- EX Special Health Populations
IV.B.1.f	Knowledge of appropriate documentation of emergencies.	EXSC 201- First Aid EXSC 451- Professional Development in Exercise Science and Risk Management EXSC 453- Exercise Testing & Prescription
IV.B.2.a	Skill in applying first-aid procedures for exercise-related injuries (e.g. bleeding, strains/sprains, fractures, shortness of breath, palpitations, hypoglycemia, allergic reactions, fainting/syncope).	EXSC 201- First Aid
IV.B.2.b	Skill in applying basic life support, first aid, cardiopulmonary resuscitation, and automated external defibrillator techniques.	EXSC 201- First Aid
IV.B.2.c	Skill in developing and/or modifying an evacuation plan.	EXSC 201-First Aid EXSC 451- Professional Development in Exercise Science and Risk Management

IV.B.2.d	Skill in demonstrating emergency procedures during exercise testing and/or training.	EXSC 201- First Aid EXSC 451- Professional Development in Exercise Science and Risk Management EXSC 453- Exercise Testing & Prescription
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