



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.

DOMAIN I: HEALTH AND FITNESS ASSESSMENT		
A. Implement assessment protocols and pre-participation health screening procedures to maximize participant safety and minimize risk.		
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.	EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription
I.A.1.b	b) Knowledge of the key components included in informed consent and health/medical history.	EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription
I.A.1.c	c) Knowledge of the limitations of informed consent and health/medical history.	EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription

DOMAIN I: HEALTH AND FITNESS ASSESSMENT		
B. Determine participant's readiness to take part in a health-related physical fitness assessment and exercise program.		
I.B.1.a	a) Knowledge of risk factor thresholds for ACSM risk stratification including genetic and lifestyle factors related to the development of CVD.	EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations
I.B.1.b	b) Knowledge of the major signs or symptoms suggestive of cardiovascular, pulmonary and metabolic disease.	EXSC453 Exercise Testing & Prescription EXSC465 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).	EXSC453 Exercise Testing & Prescription EXSC465 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).	EXSC453 Exercise Testing & Prescription EXSC465 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).	EXSC453 Exercise Testing & Prescription EXSC465 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).	EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations
I.B.1.g	g) Knowledge of ACSM risk stratification categories and their implications for medical clearance before administration of an exercise test or participation in an exercise program.	EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations
I.B.1.h	h) Knowledge of risk factors that may be favorably modified by physical activity habits.	EXSC453 Exercise Testing & Prescription EXSC465 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.	EXSC200 Health Promotion EXSC240 Medical Terminology EXSC451 Administration of Exercise Science EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations

I.B.1.j	j) Knowledge of recommended plasma cholesterol levels for adults based on National Cholesterol Education Program/ATP Guidelines.	EXSC411 Cardiovascular Physiology EXSC453 Exercise Testing & Prescription EXSC465 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.	EXSC411 Cardiovascular Physiology EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations
I.B.1.l	l) Knowledge of medical supervision recommendations for cardiorespiratory fitness testing.	EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription EXSC465 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).	EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription EXSC465 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.	EXSC453 Exercise Testing & Prescription EXSC465 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.	EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription

DOMAIN I: HEALTH AND FITNESS ASSESSMENT C. Select and prepare physical fitness assessments for healthy participants and those with controlled disease.		
I.C.1.a	Knowledge of the physiological basis of the major components of physical fitness: cardiorespiratory fitness, body composition, flexibility, muscular strength, and muscular endurance.	EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations
I.C.1.b	Knowledge of selecting the most appropriate testing protocols for each participant based on preliminary screening data.	EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations
I.C.1.c	Knowledge of calibration techniques and proper use of fitness testing equipment.	EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations
I.C.1.d	Knowledge of the purpose and procedures of fitness testing protocols for the components of health related fitness.	EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations
I.C.1.e	Knowledge of test termination criteria and proper procedures to be followed after discontinuing health fitness tests.	EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations

I.C.1.f	Knowledge of fitness assessment sequencing.	EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription EXSC465 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).	EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription EXSC465 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).	EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations
I.C.2.a	Skill in analyzing and interpreting information obtained from assessment of the components of health related fitness.	EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations
I.C.2.b	Skill in modifying protocols and procedures for testing children, adolescents, older adults and individuals with special considerations.	EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations

DOMAIN I: HEALTH AND FITNESS ASSESSMENT D. Conduct and interpret cardiorespiratory fitness assessments.		
I.D.1.a	Knowledge of common submaximal and maximal cardiorespiratory fitness assessment protocols.	EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription
I.D.1.b	Knowledge of blood pressure measurement techniques.	EXSC395 Field Assessment
I.D.1.c	Knowledge of Korotkoff sounds for determining systolic and diastolic blood pressure.	EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription
I.D.1.d	Knowledge of the blood pressure response to exercise.	EXSC352 Physiology of Exercise EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription
I.D.1.e	Knowledge of techniques of measuring heart rate and heart rate response to exercise.	EXSC352 Physiology of Exercise EXSC395 Field Assessment
I.D.1.f	Knowledge of the rating of perceived exertion (RPE).	EXSC352 Physiology of Exercise EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription
I.D.1.g	Knowledge of heart rate, blood pressure and RPE monitoring techniques before, during, and after cardiorespiratory fitness testing.	EXSC352 Physiology of Exercise EXSC395 Field Assessment

I.D.1.h	Knowledge of the anatomy and physiology of the cardiovascular and pulmonary systems.	BIOL234 Anatomy & Physiology II EXSC352 Physiology of Exercise EXSC411 Cardiovascular Physiology
I.D.1.i	Knowledge of cardiorespiratory terminology including angina pectoris, tachycardia, bradycardia, arrhythmia, and hyperventilation.	EXSC240 Medical Terminology EXSC352 Physiology of Exercise EXSC411 Cardiovascular Physiology EXSC453 Exercise Testing & Prescription
I.D.1.j	Knowledge of the pathophysiology of myocardial ischemia, myocardial infarction, stroke, hypertension, and hyperlipidemia.	EXSC352 Physiology of Exercise EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription EXSC465 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.	EXSC352 Physiology of Exercise EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription
I.D.1.l	Knowledge of oxygen consumption dynamics during exercise (e.g., heart rate, stroke volume, cardiac output, ventilation, ventilatory threshold).	EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription
I.D.1.m	Knowledge of methods of calculating VO_{2max} .	EXSC352 Physiology of Exercise EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription

I.D.1.n	Knowledge of cardiorespiratory responses to acute graded exercise of conditioned and unconditioned participants.	EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription
I.D.2.a	Skill in interpreting cardiorespiratory fitness test results.	EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription
I.D.2.b	Skill in locating anatomic landmarks for palpation of peripheral pulses and blood pressure.	EXSC395 Field Assessment
I.D.2.c	Skill in measuring heart rate, blood pressure, and RPE at rest and during exercise.	EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription
I.D.2.d	Skill in conducting submaximal exercise tests (e.g., cycle ergometer, treadmill, field testing, step test).	EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription
I.D.2.e	Skill in determining cardiorespiratory fitness based on submaximal exercise test results.	EXSC395 Field Assessment

	DOMAIN I: HEALTH AND FITNESS ASSESSMENT E. Conduct assessments of muscular strength, muscular endurance and flexibility.	
I.E.1.a	Knowledge of common muscular strength, muscular endurance, and flexibility assessment protocols.	EXSC395 Field Assessment
I.E.1.b	Knowledge of interpreting muscular strength, muscular endurance, and flexibility assessments.	EXSC395 Field Assessment
I.E.1.c	Knowledge of relative strength, absolute strength, and repetition maximum (1 -RM) estimation.	EXSC395 Field Assessment
I.E.1.d	Knowledge of the anatomy of bone, skeletal muscle, and connective tissues.	EXSC351 Kinesiology

I.E.1.e	Knowledge muscle action terms including anterior, posterior, inferior, superior, medial, lateral, supination, pronation, flexion, extension, adduction, abduction, hyperextension, rotation, circumduction, agonist, antagonist, and stabilizer.	EXSC351 Kinesiology
I.E.1.f	Knowledge of the planes and axes in which each movement action occurs.	EXSC351 Kinesiology
I.E.1.g	Knowledge of the interrelationships among center of gravity, base of support, balance, stability, posture, and proper spinal alignment.	EXSC351 Kinesiology
I.E.1.h	Knowledge of the normal curvatures of the spine and common assessments of postural alignment.	EXSC351 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)	BIOL233 Anatomy & Physiology I EXSC351 Kinesiology
I.E.1.j	Knowledge of the major joints and their associated movement.	BIOL233 Anatomy & Physiology I EXSC351 Kinesiology
I.E.2.a	Skill in identifying the major bones, muscles, and joints.	BIOL233 Anatomy & Physiology I EXSC351 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).	EXSC351 Kinesiology
I.E.2.c	Skill in estimating 1-RM using lower resistance (2-10 RM).	EXSC351 Kinesiology
I.E.2.d	Skill in interpreting results of muscular strength, muscular endurance and flexibility assessments.	EXSC351 Kinesiology

DOMAIN I: HEALTH AND FITNESS ASSESSMENT F. Conduct anthropometric and body composition assessments.		
I.F.1.a	Knowledge of the advantages, disadvantages and limitations of body composition techniques (e.g., air displacement plethysmography (BOD POD®), dual-energy x-ray absorptiometry (DEXA), hydrostatic weighing, skinfolds, and bioelectrical impedance.	EXSC351 Kinesiology
I.F.1.b	Knowledge of the standardized descriptions of circumference and skinfold sites.	EXSC351 Kinesiology
I.F.1.c	Knowledge of procedures for determining BMI and taking skinfold and circumference measurements.	EXSC351 Kinesiology
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.	EXSC351 Kinesiology
I.F.2.a	Skill in locating anatomic landmarks for skinfold and circumference measurements.	EXSC351 Kinesiology
I.F.2.b	Skill in interpreting the results of anthropometric and body composition assessments.	EXSC351 Kinesiology

DOMAIN II: Exercise Prescription and Implementation A. Review pre-participation health screening including self-guided health questionnaires and appraisals, exercise history and fitness assessments		
II.A.1.a	Skill in synthesizing pre-screening results and reviewing them with participants	EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription

DOMAIN II: Exercise Prescription and Implementation B. Determine safe and effective exercise programs to achieve desired outcomes and goals.		
II.B.1.a	Knowledge of strength, aerobic, and flexibility based exercise.	EXSC200 Health Promotion EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription
II.B.1.b	Knowledge of the benefits and precautions associated with exercise training in apparently healthy participants and those with controlled disease.	EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations
II.B.1.c	Knowledge of program development for specific client needs (e.g., sport specific training, performance, health, lifestyle, functional ability, balance, agility, aerobic, anaerobic).	EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations
II.B.1.d	Knowledge of the six motor skill related physical fitness components; agility, balance, coordination, reaction time, speed, and power.	EXSC200 Health Promotion EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription
II.B.1.e	Knowledge of the physiologic changes associated with an acute bout of exercise.	EXSC352 Physiology of Exercise EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription

II.B.1.f	Knowledge of the physiologic adaptations following chronic exercise training.	EXSC352 Physiology of Exercise EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription
II.B.1.g	Knowledge of ACSM exercise prescription guidelines for strength, aerobic, and flexibility based exercise for apparently healthy clients, clients with increased risk, and clients with controlled disease.	EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations
II.B.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).	EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations
II.B.1.i	Knowledge of the physiological principles related to warm-up and cool-down.	EXSC352 Physiology of Exercise EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription
II.B.1.j	Knowledge of the principles of reversibility, progressive overload, individual differences and specificity of training, and how they relate to exercise prescription.	EXSC200 Health Promotion EXSC453 Exercise Testing & Prescription
II.B.1.k	Knowledge the role of aerobic and anaerobic energy systems in the performance of various physical activities.	EXSC352 Physiology of Exercise EXSC416 Metabolic Interactions
II.B.1.l	Knowledge of the basic biomechanical principles of human movement.	EXSC351 Kinesiology
II.B.1.m	Knowledge of the psychological and physiological signs and symptoms of overtraining.	EXSC352 Physiology of Exercise EXSC416 Metabolic Interactions

II.B.1.n	Knowledge of the signs and symptoms of common musculoskeletal injuries associated with exercise (e.g., sprain, strain, bursitis, and tendonitis).	EXSC200 Health Promotion EXSC260 Strength Training
II.B.1.o	Knowledge of the advantages and disadvantages of exercise equipment (e.g., free weights, selectorized machines, aerobic equipment).	EXSC260 Strength Training
II.B.2.a	Skill in teaching and demonstrating exercises.	EXSC260 Strength Training
II.B.2.b	Skill in designing safe and effective training programs.	EXSC260 Strength Training EXSC298 Fitness Leadership EXSC453 Exercise Testing & Prescription
II.B.2.c	Skill in implementing exercise prescription guidelines for apparently healthy clients, clients with increased risk, and clients with controlled disease.	EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations

	DOMAIN II: Exercise Prescription and Implementation C. Implement cardiorespiratory exercise prescriptions using the FITT principle (frequency, intensity, time, and type) for apparently healthy participants based on current health status, fitness goals and availability of time.	
II.C.1.a	Knowledge of the recommended FITT framework for the development of cardiorespiratory fitness.	EXSC352 Physiology of Exercise EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription

II.C.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.	EXSC352 Physiology of Exercise EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription
II.C.1.c	Knowledge of the minimal threshold of physical activity required for health benefits and/or fitness development.	EXSC352 Physiology of Exercise EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription
II.C.1.d	Knowledge of determining exercise intensity using HRR, VO ₂ R, peak HR method, peak VO ₂ method, peak METs method, and the RPE Scale.	EXSC352 Physiology of Exercise EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription
II.C.1.e	Knowledge of the accuracy of HRR, VO ₂ R, peak HR method, peak VO ₂ method, peak METs method, and the RPE Scale.	EXSC352 Physiology of Exercise EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription
II.C.1.f	Knowledge of abnormal responses to exercise (e.g., hemodynamic, cardiac, ventilatory).	EXSC352 Physiology of Exercise EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription
II.C.1.g	Knowledge of metabolic calculations (e.g., unit conversions, deriving energy cost of exercise, caloric expenditure).	EXSC352 Physiology of Exercise EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription

II.C.1.h	Knowledge of calculating the caloric expenditure of an exercise session (kcal/session ¹).	EXSC352 Physiology of Exercise EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription
II.C.1.i	Knowledge of methods for establishing and monitoring levels of exercise intensity, including heart rate, RPE, and METs.	EXSC352 Physiology of Exercise EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription
II.C.1.j	Knowledge of the applications of anaerobic training principles.	EXSC352 Physiology of Exercise EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription
II.C.1.k	Knowledge of the anatomy and physiology of the cardiovascular and pulmonary systems including the basic properties of cardiac muscle.	EXSC352 Physiology of Exercise EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription
II.C.1.l	Knowledge of the basic principles of gas exchange.	EXSC352 Physiology of Exercise EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription
II.C.2.a	Skill in determining appropriate exercise frequency, intensity, time and type for clients with various fitness levels.	EXSC352 Physiology of Exercise EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription

II.C.2.b	Skill in determining the energy cost, absolute and relative oxygen costs (VO ₂), and MET levels of various activities and applying the information to an exercise prescription.	EXSC352 Physiology of Exercise EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription
II.C.2.c	Skill in identifying improper technique in the use of cardiovascular equipment.	EXSC352 Physiology of Exercise EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription
II.C.2.d	Skill in teaching and demonstrating the use of a variety of cardiovascular exercise equipment.	EXSC352 Physiology of Exercise EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription

DOMAIN II: Exercise Prescription and Implementation D. Implement exercise prescriptions using the FITT principle (frequency, intensity, time, and type) for flexibility, muscular strength, and muscular endurance for apparently healthy participants based on current health status, fitness goals and availability of time.		
II.D.1.a	Knowledge of the recommended FITT framework for the development of muscular strength, muscular endurance and flexibility.	EXSC260 Strength Training EXSC298 Fitness Leadership EXSC453 Exercise Testing & Prescription
II.D.1.b	Knowledge of the minimal threshold of physical activity required for health benefits and/or fitness development.	EXSC260 Strength Training EXSC298 Fitness Leadership EXSC453 Exercise Testing & Prescription

II.D.1.c	Knowledge of safe and effective exercises designed to enhance muscular strength and/or endurance of major muscle groups.	EXSC260 Strength Training EXSC298 Fitness Leadership EXSC453 Exercise Testing & Prescription
II.D.1.d	Knowledge of safe and effective stretches that enhance flexibility.	EXSC260 Strength Training EXSC298 Fitness Leadership EXSC453 Exercise Testing & Prescription
II.D.1.e	Knowledge of indications for water based exercise (e.g., arthritis, obesity).	EXSC465 Special Health Populations
II.D.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).	EXSC260 Strength Training EXSC453 Exercise Testing & Prescription
II.D.1.g	Knowledge of acute (e.g., load, volume, sets, repetitions, rest periods, order of exercises) and chronic training variables (e.g., periodization).	EXSC260 Strength Training EXSC453 Exercise Testing & Prescription
II.D.1.h	Knowledge of the types of muscle contractions (e.g., eccentric, concentric, isometric).	EXSC260 Strength Training EXSC453 Exercise Testing & Prescription
II.D.1.i	Knowledge of joint movements (e.g., flexion, extension, adduction, abduction) and the muscles responsible for them.	EXSC351 Kinesiology
II.D.1.j	Knowledge of acute and delayed onset muscle soreness (DOMS).	EXSC260 Strength Training EXSC453 Exercise Testing & Prescription

II.D.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.	BIOL233 Anatomy & Physiology I BIOL234 Anatomy & Physiology II EXSC351 Kinesiology EXSC352 Physiology of Exercise EXSC451 Administration of Exercise Science
II.D.1.l	Knowledge of the stretch reflex, proprioceptors, golgi tendon organ (GTO), muscle spindles, and how they relate to flexibility.	EXSC351 Kinesiology EXSC352 Physiology of Exercise
II.D.1.m	Knowledge of muscle-related terminology including atrophy, hyperplasia, hypertrophy.	EXSC240 Medical Terminology EXSC351 Kinesiology EXSC352 Physiology of Exercise
II.D.1.n	Knowledge of the Valsalva maneuver and its implications during exercise.	EXSC260 Strength Training EXSC453 Exercise Testing & Prescription
II.D.1.o	Knowledge of the physiology underlying plyometric training and common plyometric exercises (e.g., box jumps, leaps, bounds).	EXSC260 Strength Training EXSC453 Exercise Testing & Prescription
II.D.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).	EXSC260 Strength Training EXSC298 Fitness Leadership
II.D.1.q	Knowledge of prescribing exercise using the calculated %1-RM.	EXSC260 Strength Training EXSC453 Exercise Testing & Prescription

II.D.1.r	Knowledge of spotting positions and techniques for injury prevention and exercise assistance.	EXSC260 Strength Training
II.D.1.s	Knowledge of periodization (e.g., macro, micro, mesocycles) and associated theories.	EXSC260 Strength Training EXSC453 Exercise Testing & Prescription
II.D.1.t	Knowledge of safe and effective Olympic weight lifting exercises.	EXSC260 Strength Training
II.D.1.u	Knowledge of safe and effective core stability exercises (e.g., planks, crunches, bridges, cable twists).	EXSC260 Strength Training
II.D.2.a	Skill in identifying improper technique in the use of resistive equipment (e.g., stability balls, weights, bands, resistance bars, and water exercise equipment).	EXSC260 Strength Training
II.D.2.b	Skill in teaching and demonstrating appropriate exercises for enhancing musculoskeletal flexibility.	EXSC260 Strength Training EXSC453 Exercise Testing & Prescription
II.D.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).	EXSC260 Strength Training EXSC453 Exercise Testing & Prescription

	DOMAIN II: Exercise Prescription and Implementation G. Establish exercise progression guidelines for resistance, aerobic and flexibility activity to achieve the goals of apparently healthy participants.	
II.E.1.a	Knowledge of the basic principles of exercise progression.	EXSC200 Health Promotion EXSC260 Strength Training EXSC453 Exercise Testing & Prescription

II.E.1.b	Knowledge of adjusting the FITT framework in response to individual changes in conditioning.	EXSC200 Health Promotion EXSC260 Strength Training EXSC453 Exercise Testing & Prescription
II.E.1.c	Knowledge of the importance of performing periodic reevaluations to assess changes in fitness status.	EXSC200 Health Promotion EXSC260 Strength Training EXSC453 Exercise Testing & Prescription
II.E.1.d	Knowledge of the training principles that promote improvements in muscular strength, muscular endurance, cardiorespiratory fitness, and flexibility.	EXSC200 Health Promotion EXSC260 Strength Training EXSC453 Exercise Testing & Prescription
II.E.2.a	Skill in recognizing the need for progression and communicating updates to exercise prescriptions.	EXSC200 Health Promotion EXSC260 Strength Training EXSC453 Exercise Testing & Prescription

	DOMAIN II: Exercise Prescription and Implementation H. Implement a weight management program as indicated by personal goals that are supported by pre-participation health screening, health history, and body composition/anthropometrics.	
II.F.1.a	Knowledge of exercise prescriptions for achieving weight management, including weight loss, weight maintenance and weight gain goals.	EXSC200 Health Promotion EXSC380 Sports Nutrition EXSC416 Metabolic Interactions

II.F.1.b	Knowledge of energy balance and basic nutritional guidelines (e.g., MyPyramid, USDA Dietary Guidelines for Americans).	EXSC200 Health Promotion EXSC380 Sports Nutrition EXSC416 Metabolic Interactions
II.F.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.	EXSC200 Health Promotion EXSC380 Sports Nutrition EXSC416 Metabolic Interactions
II.F.1.d	Knowledge of the relationship between body composition and health.	EXSC200 Health Promotion EXSC380 Sports Nutrition EXSC416 Metabolic Interactions
II.F.1.e	Knowledge of the unique dietary needs of participant populations (e.g., women, children, older adults, pregnant women).	EXSC200 Health Promotion EXSC380 Sports Nutrition EXSC416 Metabolic Interactions
II.F.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).	EXSC200 Health Promotion EXSC380 Sports Nutrition EXSC416 Metabolic Interactions
II.F.1.g	Knowledge of methods for modifying body composition including diet, exercise, and behavior modification.	EXSC200 Health Promotion EXSC380 Sports Nutrition EXSC416 Metabolic Interactions

II.F.1.h	Knowledge of fuel sources for aerobic and anaerobic metabolism including carbohydrates, fats and proteins.	EXSC200 Health Promotion EXSC380 Sports Nutrition EXSC416 Metabolic Interactions
II.F.1.i	Knowledge of the effects of overall dietary composition on healthy weight management.	EXSC200 Health Promotion EXSC380 Sports Nutrition EXSC416 Metabolic Interactions
II.F.1.j	Knowledge of the importance of maintaining normal hydration before, during and after exercise.	EXSC200 Health Promotion EXSC380 Sports Nutrition EXSC416 Metabolic Interactions
II.F.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).	EXSC200 Health Promotion EXSC380 Sports Nutrition EXSC416 Metabolic Interactions
II.F.1.l	Knowledge of the kilocalorie levels of carbohydrate, fat, protein, and alcohol.	EXSC200 Health Promotion EXSC380 Sports Nutrition EXSC416 Metabolic Interactions
II.F.1.m	Knowledge of the relationship between kilocalorie expenditures and weight loss.	EXSC200 Health Promotion EXSC380 Sports Nutrition EXSC416 Metabolic Interactions

II.F.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).	EXSC465 Special Health Populations
II.F.1.o	Knowledge of the relationship between body fat distribution patterns and health.	EXSC395 Field Assessment
II.F.1.p	Knowledge of the physiology and pathophysiology of overweight and obese participants.	EXSC465 Special Health Populations
II.F.1.q	Knowledge of the recommended FITT framework for participants who are overweight or obese.	EXSC465 Special Health Populations
II.F.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.	EXSC465 Special Health Populations
II.F.2.a	Skill in applying behavioral strategies (e.g., exercise, diet, behavioral modification strategies) for weight management.	EXSC200 Health Promotion
II.F.2.b	Skill in modifying exercises for individuals limited by body size.	EXSC260 Strength Training EXSC465 Special Health Populations
II.F.2.c	Skill in calculating the volume of exercise in terms of kcal/session ¹ .	EXSC453 Exercise Testing & Prescription

	DOMAIN II: Exercise Prescription and Implementation I. Prescribe and implement exercise programs for participants with controlled cardiovascular, pulmonary, and metabolic diseases and other clinical populations.	
II.G.1.a	Knowledge of ACSM risk stratification and exercise prescription guidelines for participants with cardiovascular, pulmonary, and metabolic diseases and other clinical populations.	EXSC465 Special Health Populations

II.G.1.b	Knowledge of ACSM relative and absolute contraindications for initiating exercise sessions or exercise testing, and indications for terminating exercise sessions and exercise testing.	EXSC465 Special Health Populations
II.G.1.c	Knowledge of physiology and pathophysiology of cardiac disease, arthritis, diabetes mellitus, dyslipidemia, hypertension, metabolic syndrome, musculoskeletal injuries, overweight and obesity, osteoporosis, peripheral artery disease, and pulmonary disease.	EXSC465 Special Health Populations
II.G.1.d	Knowledge of the effects of diet and exercise on blood glucose levels in diabetics.	EXSC465 Special Health Populations
II.G.1.e	Knowledge of the recommended FITT principle 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.	EXSC465 Special Health Populations
II.G.2.a	Skill in progressing exercise programs, according to the FITT principle, in a safe and effective manner.	EXSC465 Special Health Populations
II.G.2.b	Skill in modifying the exercise prescription and/or exercise choice for individuals with cardiac disease, arthritis, diabetes mellitus, dyslipidemia, hypertension, metabolic syndrome, musculoskeletal injuries, overweight and obesity, osteoporosis, peripheral artery disease, and pulmonary disease.	EXSC465 Special Health Populations
II.G.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.	EXSC465 Special Health Populations

DOMAIN II: Exercise Prescription and Implementation J. Prescribe and implement exercise programs for healthy special populations (i.e., older adults, youth, and pregnant women).		
II.H.1.a	Knowledge of normal maturational changes, from childhood to old age, and their effects on the skeletal muscle, bone, 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.	EXSC465 Special Health Populations
II.H.1.b	Knowledge of techniques for the modification of cardiovascular, flexibility, and resistance exercises based on age, functional capacity and physical condition.	EXSC465 Special Health Populations
II.H.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.	EXSC465 Special Health Populations
II.H.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.	EXSC465 Special Health Populations
II.H.1.e	Knowledge of the benefits and precautions associated with exercise training across the lifespan.	EXSC465 Special Health Populations
II.H.1.f	Knowledge of the recommended FITT framework for the development of cardiorespiratory fitness, muscular fitness and flexibility in apparently healthy children and adolescents.	EXSC465 Special Health Populations
II.H.1.g	Knowledge of the effects of the aging process on the musculoskeletal and cardiovascular structures and functions during rest, exercise, and recovery.	EXSC465 Special Health Populations
II.H.1.h	Knowledge of the recommended FITT framework necessary for the development of cardiorespiratory fitness, muscular fitness, balance, and flexibility in apparently healthy, older adults.	EXSC465 Special Health Populations

II.H.1.i	Knowledge of common orthopedic and cardiovascular exercise considerations for older adults.	EXSC465 Special Health Populations
II.H.1.j	Knowledge of the relationship between regular physical activity and the successful performance of activities of daily living (ADLs) for older adults.	EXSC465 Special Health Populations
II.H.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.	EXSC465 Special Health Populations
II.H.2.a	Skill in teaching and demonstrating appropriate exercises for healthy populations with special considerations.	EXSC465 Special Health Populations
II.H.2.b	Skill in modifying exercises based on age, physical condition, and current health status.	EXSC465 Special Health Populations

	DOMAIN II: Exercise Prescription and Implementation K. Modify exercise prescriptions based on environmental conditions.	
II.I.1.a	Knowledge of the effects of a hot, cold, or high altitude environment on the physiologic response to exercise.	EXSC352 Physiology of Exercise EXSC453 Exercise Testing & Prescription
II.I.1.b	Knowledge of special precautions and program modifications for exercise in a hot, cold, or high altitude environment.	EXSC352 Physiology of Exercise EXSC453 Exercise Testing & Prescription
II.I.1.c	Knowledge of the role of acclimatization when exercising in a hot or high altitude environment.	EXSC352 Physiology of Exercise EXSC453 Exercise Testing & Prescription
II.I.1.d	Knowledge of appropriate fluid intake during exercise in a hot, humid environments as well as cold, and altitude.	EXSC352 Physiology of Exercise EXSC453 Exercise Testing & Prescription

DOMAIN III: Exercise Counseling and Behavioral Strategies A. Optimize adoption and adherence to exercise programs and other healthy behaviors by applying effective communication techniques.		
III.A.1.a	Knowledge of the effective and timely uses of communication modes (e.g., email, telephone, web site, newsletters).	EXSC200 Health Promotion EXSC298 Fitness Leadership EXSC395 Field Assessment
III.A.1.b	Knowledge of verbal and non-verbal behaviors that communicate positive reinforcement and encouragement (e.g., eye contact, targeted praise, empathy).	EXSC200 Health Promotion EXSC298 Fitness Leadership EXSC395 Field Assessment
III.A.1.c	Knowledge of group leadership techniques for working with participants of all ages.	EXSC200 Health Promotion EXSC298 Fitness Leadership EXSC395 Field Assessment
III.A.1.d	Knowledge of active listening techniques.	EXSC200 Health Promotion EXSC298 Fitness Leadership EXSC395 Field Assessment
III.A.1.e	Knowledge of learning modes (auditory, visual, kinesthetic).	EXSC200 Health Promotion EXSC298 Fitness Leadership EXSC395 Field Assessment

III.A.1.f	Knowledge of types of feedback (e.g., evaluative, supportive, descriptive).	EXSC200 Health Promotion EXSC298 Fitness Leadership EXSC395 Field Assessment
III.A.2.a	Skill in using active listening techniques.	EXSC200 Health Promotion EXSC298 Fitness Leadership EXSC395 Field Assessment
III.A.2.b	Skill in applying teaching and training techniques to optimize participant training sessions.	EXSC200 Health Promotion EXSC298 Fitness Leadership EXSC395 Field Assessment
III.A.2.c	Skill in using feedback to optimize participant training sessions.	EXSC200 Health Promotion EXSC298 Fitness Leadership EXSC395 Field Assessment
III.A.2.d	Skill in applying verbal and non-verbal communications with diverse participant populations.	EXSC200 Health Promotion EXSC298 Fitness Leadership EXSC395 Field Assessment

	DOMAIN III: Exercise Counseling and Behavioral Strategies B. Optimize adoption of and adherence to exercise programs and other healthy behaviors by applying effective behavioral and motivational strategies.	
III.B.1.a	Knowledge of behavior change models and theories (e.g., health belief model, theory of planned behavior, socio-ecological model, transtheoretical model, social cognitive theory, and cognitive evaluation theory).	EXSC200 Health Promotion EXSC395 Field Assessment
III.B.1.b	Knowledge of the basic principles involved in Motivational Interviewing.	EXSC200 Health Promotion EXSC395 Field Assessment
III.B.1.c	Knowledge of intervention strategies and stress management techniques.	EXSC200 Health Promotion EXSC395 Field Assessment
III.B.1.d	Knowledge of the stages of motivational readiness (e.g., Transtheoretical model).	EXSC200 Health Promotion EXSC395 Field Assessment
III.B.1.e	Knowledge of behavioral strategies for enhancing exercise and health behavior change (e.g., reinforcement, S.M.A.R.T. goal setting, social support).	EXSC200 Health Promotion EXSC395 Field Assessment
III.B.1.f	Knowledge of behavior modification terminology including, but not limited to, self-esteem, self-efficacy, antecedents, cues to action, behavioral beliefs, behavioral intentions, and reinforcing factors.	EXSC200 Health Promotion EXSC395 Field Assessment
III.B.1.g	Knowledge of behavioral strategies (e.g., exercise, diet, behavioral modification strategies) for weight management.	EXSC200 Health Promotion EXSC395 Field Assessment

III.B.1.h	Knowledge of the role that affect, mood and emotion play in exercise adherence.	EXSC200 Health Promotion EXSC395 Field Assessment
III.B.1.i	Knowledge of common barriers to exercise initiation and compliance (e.g., time management, injury, fear, lack of knowledge, weather).	EXSC200 Health Promotion EXSC395 Field Assessment
III.B.1.j	Knowledge of techniques that facilitate motivation (e.g., goal setting, incentive programs, achievement recognition, social support).	EXSC200 Health Promotion EXSC395 Field Assessment
III.B.1.k	Knowledge of the role extrinsic and intrinsic motivation plays in the adoption and maintenance of behavior change.	EXSC200 Health Promotion EXSC395 Field Assessment
III.B.1.l	Knowledge of relapse prevention strategies and plans of action.	EXSC200 Health Promotion EXSC395 Field Assessment
III.B.1.m	Knowledge of applying health coaching principles and lifestyle management techniques related to behavior change.	EXSC200 Health Promotion EXSC395 Field Assessment
III.B.1.n	Knowledge of strategies that increase non-structured physical activity levels (e.g., stair walking, parking farther away, bike to work).	EXSC200 Health Promotion EXSC395 Field Assessment
III.B.2.a	Skill in explaining the purpose and value of understanding perceived exertion.	EXSC200 Health Promotion EXSC395 Field Assessment
III.B.2.b	Skill in using imagery as a motivational tool.	EXSC200 Health Promotion EXSC395 Field Assessment

III.B.2.c	Skill in evaluating behavioral readiness to optimize exercise adherence.	EXSC200 Health Promotion EXSC395 Field Assessment
III.B.2.d	Skill in applying the theories related to behavior change to diverse populations.	EXSC200 Health Promotion EXSC395 Field Assessment
III.B.2.e	Skill in developing intervention strategies to increase self-efficacy and self-confidence.	EXSC200 Health Promotion EXSC395 Field Assessment
III.B.2.f	Skill in developing reward systems that support and maintain program adherence.	EXSC200 Health Promotion EXSC395 Field Assessment
III.B.2.g	Skill in setting effective behavioral goals.	EXSC200 Health Promotion EXSC395 Field Assessment

	DOMAIN III: Exercise Counseling and Behavioral Strategies C. Provide educational resources to support clients in the adoption and maintenance of healthy lifestyle behaviors.	
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).	EXSC200 Health Promotion EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations
III.C.1.b	Knowledge of the dynamic inter-relationship between fitness level, body composition, stress and overall health.	EXSC200 Health Promotion EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations

III.C.1.c	Knowledge of modifications necessary to promote healthy lifestyle behaviors for diverse populations.	EXSC200 Health Promotion EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations
III.C.1.d	Knowledge of stress management techniques and relaxation techniques (e.g., progressive relaxation, guided imagery, massage therapy).	EXSC200 Health Promotion EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations
III.C.1.e	Knowledge of the activities of daily living (ADLs) and how they relate to overall health.	EXSC200 Health Promotion EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations
III.C.1.f	Knowledge in accessing and disseminating scientifically-based, relevant health, exercise, nutrition, and wellness-related resources and information.	EXSC200 Health Promotion EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations
III.C.1.g	Knowledge of specific, age-appropriate leadership techniques and educational methods to increase client engagement.	EXSC200 Health Promotion EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations

III.C.1.h	Knowledge of community-based exercise programs that provide social support and structured activities (e.g., walking clubs, intramural sports, golf leagues, cycling clubs).	EXSC200 Health Promotion EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations
III.C.2.a	Skill in accessing and delivering health, exercise, and wellness-related information.	EXSC200 Health Promotion EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations
III.C.2.b	Skill in educating clients about benefits and risks of exercise and the risks of sedentary behavior.	EXSC200 Health Promotion EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations

	Domain III: Exercise Counseling and Behavioral Strategies A. Provide support within the scope of practice of a Health Fitness Specialist and refer to other health professionals as indicated.	
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.	EXSC416 Metabolic Interactions EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations
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.	EXSC200 Health Promotion EXSC453 Exercise Testing & Prescription EXSC465 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.	EXSC395 Field Assessment
III.D.1.d	Knowledge of client needs and learning styles that may impact exercise sessions and exercise testing procedures.	EXSC395 Field Assessment EXSC453 Exercise Testing & Prescription EXSC465 Special Health Populations
III.D.1.e	Knowledge of conflict resolution techniques that facilitate communication among exercise cohorts.	EXSC200 Health Promotion EXSC298 Fitness Leadership
III.D.2.a	Skill in communicating the need for medical, nutritional, or mental health intervention.	EXSC200 Health Promotion EXSC260 Strength Training EXSC298 Fitness Leadership EXSC395 Field Assessment

	DOMAIN IV: Legal/Professional A. Create and disseminate risk management guidelines for a health/fitness facility, department or organization to reduce member, employee and business risk.	
IV.A.1.a	Knowledge of employee criminal background checks, child abuse clearances and drug and alcohol screenings.	EXSC451 Administration of Exercise Science
IV.A.1.b	Knowledge of employment verification requirements mandated by state and federal laws.	EXSC451 Administration of Exercise Science
IV.A.1.c	Knowledge of safe handling and disposal of body fluids and employee safety (OSHA guidelines).	EXSC451 Administration of Exercise Science

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.	EXSC451 Administration of Exercise Science
IV.A.1.e	Knowledge of sexual harassment policies and procedures.	EXSC451 Administration of Exercise Science
IV.A.1.f	Knowledge of interviewing techniques.	EXSC451 Administration of Exercise Science
IV.A.1.g	Knowledge of basic precautions taken in an exercise setting to ensure participant safety.	EXSC451 Administration of Exercise Science
IV.A.1.h	Knowledge of pre-activity screening, medical release and waiver of liability for normal and at-risk participants.	EXSC451 Administration of Exercise Science
IV.A.1.i	Knowledge of emergency response systems and procedures (EAP).	EXSC451 Administration of Exercise Science
IV.A.1.j	Knowledge of the use of signage.	EXSC451 Administration of Exercise Science
IV.A.1.k	Knowledge of preventive maintenance schedules and audit	EXSC451 Administration of Exercise Science
IV.A.1.l	Knowledge of techniques and methods of evaluating the condition of exercise equipment to reduce the potential risk of injury.	EXSC451 Administration of Exercise Science
IV.A.1.m	Knowledge of the legal implications of documented safety procedures, the use of incident documents, and ongoing safety training documentation for the purpose of safety and risk management	EXSC451 Administration of Exercise Science

IV.A.1.n	Knowledge of documentation procedures for CPR and AED certification for employees.	EXSC201 First Aid EXSC451 Administration of Exercise Science
IV.A.1.o	Knowledge of AED guidelines for implementation.	EXSC201 First Aid EXSC453 Exercise Testing & Prescription
IV.A.1.p	Knowledge of the components of the ACSM Code of Ethics and the ACSM Certified Health Fitness Specialist scope of practice.	EXSC451 Administration of Exercise Science
IV.A.2.a	Skill in developing and disseminating a policy and procedures manual.	EXSC451 Administration of Exercise Science
IV.A.2.b	Skill in developing and implementing confidentiality policies.	EXSC451 Administration of Exercise Science
IV.A.2.c	Skill in maintenance of a safe exercise environment (e.g., equipment operation, proper sanitation, safety and maintenance of exercise areas, and overall facility maintenance).	EXSC451 Administration of Exercise Science
IV.A.2.d	Skill in the organization, communication, and human resource management required to implement risk management policies and procedures.	EXSC451 Administration of Exercise Science
IV.A.2.e	Skill in training employees to identify high risk situations.	EXSC451 Administration of Exercise Science

	DOMAIN IV: Legal/Professional B. Create an effective injury prevention program and ensure that emergency policies and procedures are in place.	
IV.B.1.a	Knowledge of emergency procedures (i.e., telephone procedures, written emergency procedures (EAP), personnel responsibilities) in a health and fitness setting	EXSC451 Administration of Exercise Science
IV.B.1.b	Knowledge of basic first-aid procedures for exercise-related injuries, such as bleeding, strains/sprains, fractures, and exercise intolerance (dizziness, syncope, heat and cold injuries).	EXSC201 First Aid
IV.B.1.c	Knowledge of the Health Fitness Specialist's responsibilities and limitations, and the legal implications of carrying out emergency procedures.	EXSC451 Administration of Exercise Science
IV.B.1.d	Knowledge of safety plans, emergency procedures and first-aid techniques needed during fitness evaluations, exercise testing, and exercise training	EXSC201 First Aid EXSC395 Field Assessment
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).	EXSC201 First Aid EXSC395 Field Assessment
IV.B.1.f	Knowledge of the initial management and first-aid techniques associated with open wounds, musculoskeletal injuries, cardiovascular/pulmonary complications, and metabolic disorders.	EXSC201 First Aid
IV.B.1.g	Knowledge of emergency documentation and appropriate document utilization.	EXSC201 First Aid EXSC395 Field Assessment
IV.B.2.a	Skill in applying basic first-aid procedures for exercise-related injuries, such as bleeding, strains/sprains, fractures, and exercise intolerance (dizziness, syncope, heat and cold injuries).	EXSC201 First Aid

IV.B.2.b	Skill in applying basic life support, first aid, cardiopulmonary resuscitation, and automated external defibrillator techniques.	EXSC201 First Aid
IV.B.2.c	Skill in designing an evacuation plan.	EXSC451 Administration of Exercise Science
IV.B.2.d	Skill in demonstrating emergency procedures during exercise testing and/or training.	EXSC395 Field Assessment EXSC451 Administration of Exercise Science EXSC453 Exercise Testing & Prescription

	DOMAIN V: Management A. Manage human resources in accordance with leadership, organization, and management techniques.	
V.A.1.a	Knowledge of industry benchmark compensation and employee benefit guidelines.	EXSC451 Administration of Exercise Science
V.A.1.b	Knowledge of federal, state and local laws pertaining to staff qualifications and credentialing requirements.	EXSC451 Administration of Exercise Science
V.A.1.c	Knowledge of techniques for tracking and evaluating member retention.	EXSC451 Administration of Exercise Science
V.A.2.a	Skill in applying policies, practices and guidelines to efficiently hire, train, supervise, schedule and evaluate employees.	EXSC451 Administration of Exercise Science
V.A.2.b	Skill in applying conflict resolution techniques.	EXSC451 Administration of Exercise Science

	Domain V: Management B. Manage fiscal resources in accordance with leadership, organization, and management techniques.	
V.B.1.a	Knowledge of fiduciary roles and responsibilities inherent in managing an exercise and health promotion program.	EXSC451 Administration of Exercise Science
V.B.1.b	Knowledge of principles of financial planning and goal setting, institutional budgeting processes, forecasting, and allocation of resources.	EXSC451 Administration of Exercise Science
V.B.1.c	Knowledge of basic software systems that facilitate accounting (e.g., Excel).	EXSC451 Administration of Exercise Science
V.B.1.d	Knowledge of industry benchmarks for budgeting and finance.	EXSC451 Administration of Exercise Science
V.B.1.e	Knowledge of basic sales techniques that promote health, fitness, and wellness services.	EXSC451 Administration of Exercise Science
V.B.2.a	Skill in efficiently managing financial resources and performing related tasks (e.g., planning, budgeting, resource allocation, revenue generation).	EXSC451 Administration of Exercise Science
V.B.2.b	Skill in administering fitness- and wellness-related programs within established budgetary guidelines.	EXSC451 Administration of Exercise Science

	DOMAIN V: Management C. Establish policies and procedures for the management of health fitness facilities based on accepted safety and legal guidelines, standards and regulations.	
V.C.1.a	Knowledge of accepted guidelines, standards, and regulations used to establish policies and procedures for the management of health fitness facilities.	EXSC451 Administration of Exercise Science

V.C.1.b	Knowledge of facility design and operation principles.	EXSC451 Administration of Exercise Science
V.C.1.c	Knowledge of facility and equipment maintenance guidelines.	EXSC451 Administration of Exercise Science
V.C.1.d	Knowledge of documentation techniques for health fitness facility management.	EXSC451 Administration of Exercise Science
V.C.1.e	Knowledge of federal, state, and local laws as they relate to health fitness facility management.	EXSC451 Administration of Exercise Science

	DOMAIN V: Management D. Develop and execute a marketing plan to promote programs, services and facilities.	
V.D.1.a	Knowledge of lead generation techniques.	EXSC451 Administration of Exercise Science
V.D.1.b	Knowledge of the four Ps of marketing: product, price, placement, and promotion.	EXSC451 Administration of Exercise Science
V.D.1.c	Knowledge of public relations, community awareness, and sponsorship and their relationship to branding initiatives.	EXSC451 Administration of Exercise Science
V.D.1.d	Knowledge of advertising techniques.	EXSC451 Administration of Exercise Science
V.D.1.e	Knowledge of target market (internal) assessment techniques.	EXSC451 Administration of Exercise Science
V.D.1.f	Knowledge of target market (external) assessment techniques.	EXSC451 Administration of Exercise Science

V.D.2.a	Skill in applying marketing techniques that promote client retention.	EXSC451 Administration of Exercise Science
V.D.2.b	Skill in applying marketing techniques that attract new clients.	EXSC451 Administration of Exercise Science
V.D.2.c	Skill in designing and writing promotional materials	EXSC200 Health Promotion EXSC451 Administration of Exercise Science
V.D.2.d	Skill in collaborating with community and governmental agencies and organizations.	EXSC451 Administration of Exercise Science
V.D.2.e	Skill in providing customer service.	EXSC451 Administration of Exercise Science

	DOMAIN V: Management E. Use effective communication techniques to develop professional relationships with other allied health professionals (e.g., nutritionists, physical therapists, physicians, nurses).	
V.E.1.a	Knowledge of communication styles and techniques.	EXSC451 Administration of Exercise Science
V.E.1.b	Knowledge of networking techniques.	EXSC451 Administration of Exercise Science
V.E.2.a	Skill in planning meetings.	EXSC451 Administration of Exercise Science

