

Overall Requirement	APP STATE Course Prefix, number and Name
Domain 1: Human Anatomy and Physiology	
Structure and function of body systems	prereq to grad school
Musculoskeletal system	prereq to grad school
Neuromuscular system	prereq to grad school
Cardiovascular system	prereq to grad school
Respiratory system	prereq to grad school
Domain 2: Exercise Physiology	
Bioenergetics of exercise and training	KIN 5624
Biological energy systems	KIN 5624
Substrate depletion and repletion	KIN 5624
Bioenergetic limiting factors in exercise performance	KIN 5624
Oxygen uptake and the aerobic and anaerobic contributions to exercise	KIN 5624
Metabolic specificity of training	KIN 5624
Endocrine responses to resistance exercise	KIN 5624
Synthesis, storage, and secretion of hormones	KIN 5624
Muscle as the target for hormone interactions	KIN 5624
Role of receptors in mediating hormonal changes	KIN 5624
Categories of hormones	KIN 5624
Heavy resistance exercise and hormonal increases	KIN 5624
Mechanisms of hormonal interactions	KIN 5624
Hormonal changes in peripheral blood	KIN 5624
Adaptations in the endocrine system	KIN 5624
Primary anabolic hormones	KIN 5624
Adrenal hormones	KIN 5624
Other hormonal considerations	KIN 5624
Domain 3: Kinesiology/Biomechanics	
Biomechanics of resistance exercise	KIN 5710
Skeletal musculature	KIN 5710
Anatomical planes and major body movements	KIN 5710
Human strength and power	KIN 5710
Sources of resistance to muscle contraction	KIN 5710
Joint biomechanics: Concerns in resistance training	KIN 5710
Domain 4: Sports Nutrition	

Basic nutrition factors in health	KIN 5555
Role of sport nutrition professionals	KIN 5555
Standard nutrition guidelines	KIN 5555
Macronutrients	KIN 5555
Vitamins	KIN 5555
Minerals	KIN 5555
Fluid and electrolytes	KIN 5555
Nutrition strategies for maximizing performance	KIN 5555
Pre-competition, during-event, and post-competition nutrition	KIN 5555
Nutrition strategies for altering body composition	KIN 5555
Feeding and eating disorders	KIN 5555
Performance-enhancing substances and methods	KIN 5555
Types of performance-enhancing substances	KIN 5555
Hormones	KIN 5555
Dietary supplements	KIN 5555
Domain 5: Psychology of Sport and Exercise	
Psychology of athletic preparation and performance	KIN 5730
Role of sport psychology	KIN 5730
Ideal performance state	KIN 5730
Energy management: arousal, anxiety, and stress	KIN 5730
Influence of arousal and anxiety on performance	KIN 5730
Motivation	KIN 5730
Attention and focus	KIN 5730
Psychological techniques for improved performance	KIN 5730
Enhancing motor skill acquisition and learning	KIN 5651 and KIN 5730
Domain 6: Scientific Principles of Strength and Conditioning	
Adaptations to anaerobic training programs	KIN 5651
Neural adaptations	KIN 5651
Muscular adaptations	KIN 5651
Connective tissue adaptations	KIN 5651
Endocrine responses and adaptations to anaerobic training	KIN 5624
Cardiovascular and respiratory responses to anaerobic exercise	KIN 5624
Compatibility of aerobic and anaerobic modes of training	KIN 5624
Overtraining: definition, prevalence, diagnosis, and potential markers	KIN 5651

Detraining	KIN 5651
Adaptations to aerobic endurance training	KIN 5624
Acute responses to aerobic exercise	KIN 5624
Chronic adaptations to aerobic exercise	KIN 5624
External and individual factors influencing adaptations to aerobic endurance training	KIN 5624
Age- and sex-related differences and their implications for resistance exercise	KIN 5651
Children	KIN 5651
Female athletes	KIN 5651
Older adults	KIN 5651
Rehabilitation and reconditioning	prereq to grad school
Types of injury	prereq to grad school
Tissue healing	prereq to grad school
Rehabilitation and reconditioning strategies	prereq to grad school
Program design	prereq to grad school
Reducing risk of injury and reinjury	prereq to grad school
Domain 7: Resistance Training and Conditioning (Practical/Laboratory)	
Warm-up and flexibility training	KIN 5652
Types of stretching	KIN 5652
Static stretching techniques	KIN 5652
Dynamic stretching techniques	KIN 5652
Exercise technique for free-weight and machine training	KIN 5652
Fundamentals of exercise technique	KIN 5652
Spotting free-weight exercises	KIN 5652
Resistance training exercises	KIN 5652
Olympic-style lifting techniques: progressions and regressions	KIN 5652
Exercise technique for alternative modes and nontraditional implement training	KIN 5652
Bodyweight training methods	KIN 5652
Core stability and balance training methods	KIN 5652
Variable-resistance training methods	KIN 5652
Unilateral training	KIN 5652
Alternative modes and nontraditional exercises	KIN 5652
Domain 8: Exercise Testing/Exercise Prescription with Emphasis in Anaerobic Exercise	
Principles of test selection and administration	KIN 5652
Reasons for testing	KIN 5652

Testing terminology	KIN 5652
Evaluation of test quality	KIN 5652
Test selection	KIN 5652
Test administration	KIN 5652
Administration, scoring, and interpretation of selected tests	KIN 5652
Measuring parameters of athletic performance	KIN 5652
Selected test protocols and scoring data	KIN 5652
Statistical evaluation of test data	KIN 5001
Domain 9: Program Design as Related to Strength and Conditioning	
Program design for resistance training	KIN 5651 and KIN 5600
Principles of anaerobic exercise prescription	KIN 5651
Step 1: Needs analysis	KIN 5651 and KIN 5600
Step 2: Exercise selection	KIN 5651 and KIN 5600
Step 3: Training frequency	KIN 5651 and KIN 5600
Step 4: Exercise order	KIN 5651 and KIN 5600
Step 5: Training load and repetitions	KIN 5651 and KIN 5600
Step 6: Volume	KIN 5651 and KIN 5600
Step 7: Rest periods	KIN 5651 and KIN 5600
Program design and technique for plyometric training	KIN 5652
Plyometric mechanics and physiology	KIN 5652
Design of plyometric training programs	KIN 5652
Age considerations	KIN 5652
Plyometrics and other forms of exercise	KIN 5652
Safety considerations	KIN 5652
Plyometric drills	KIN 5652
Program design and technique for speed and agility training	KIN 5652
Speed and agility mechanics	KIN 5652
Neurophysiological basis for speed	KIN 5652
Running speed	KIN 5652
Agility performance and change-of-direction ability	KIN 5652
Methods of developing speed	KIN 5652
Methods of developing agility	KIN 5652
Program design	KIN 5652
Speed development strategies	KIN 5652

Agility development strategies	KIN 5652
Speed and agility drills	KIN 5652
Program design and technique for aerobic endurance training	KIN 5652
Factors related to aerobic endurance performance	KIN 5624
Designing an aerobic endurance program	KIN 5652
Types of aerobic endurance training programs	KIN 5652
Application of program design to training seasons	KIN 5652
Special issues related to aerobic endurance training	KIN 5652
Aerobic endurance training exercises	KIN 5652
Periodization	KIN 5651
Central concepts related to periodization	KIN 5651
Periodization hierarchy	KIN 5651
Periodization periods	KIN 5651
Applying sport seasons to the periodization periods	KIN 5651 and KIN 5600
Undulating versus linear periodization models	KIN 5651
Example of an annual training plan	KIN 5651 and KIN 5600
Domain 10: Program organization, administration, and oversight	
Facility design, layout, and organization	KIN 5652
General aspects of new facility design	KIN 5652
Existing strength and conditioning facilities	KIN 5652
Assessing athletic program needs	KIN 5652
Designing the strength and conditioning facility	KIN 5652
Arranging equipment in the strength and conditioning facility	KIN 5652
Maintaining and cleaning surfaces and equipment	KIN 5652
Facility policies, procedures, and legal issues	KIN 5652
Mission statement and program goals	KIN 5652
Legal and ethical issues	KIN 5652
Staff policies and activities	KIN 5652
Facility administration	KIN 5652
Emergency planning and response	KIN 5652