

Exercise Science Advising Packet

EXSC Major Requirements Based on the 2021-22 and Catalog

Required Courses (All courses)

MATH104: Elementary Statistics or MATH250: Statistical Methods

PSYC 103: Introduction to Psychological Sciences

BIOL221: Anatomy & Physiology I

BIOL222: Anatomy & Physiology II

Core Courses (All courses)

EXSC 201: Foundations in Exercise Science & Physical Education (No PR)

EXSC 210: Cardiovascular Assessment and Exercise Prescription (No PR)

EXSC 211: Neuromuscular Assessment and Exercise Prescription (No PR)

EXSC 235: Motor Skill Behavior (No PR)

EXSC 250: Providing Healthcare for the Physically Active (No PR)

HEAL 257: Principles of Nutrition

EXSC330: Kinesiology (BIOL221 & EXSC211 & EXSC235)

EXSC 333: Exercise Nutrition (BIOL 221 & BIOL 222 & HEAL 257)

EXSC 340: Exercise Physiology (EXSC 210 & EXSC 211 & BIOL 221 & BIOL 222, lab CR)

EXSC 340L: Exercise Physiology Lab (EXSC 210 & EXSC 211 & BIOL 221 & BIOL 222, lecture CR)

EXSC 345: Research Design & Analysis (EXSC 210 & EXSC 211 & MATH 104 or MATH 250)

EXSC 424: Physical Activity for Special Populations (EXSC 340 & L)

EXSC 458: Administration & Management in Exercise Science (EXSC 201 & senior standing)

EXSC Electives (6 credits)

EXSC 320: Special Topics in Exercise Science (EXSC 201 & junior standing; or permission of instructor)

EXSC 350: Group Exercise Leadership (EXSC 201 & EXSC 210 & EXSC 211)

EXSC 355: Exercise Psychology (EXSC 201, PSYC 103)

EXSC 401: Independent Study (instructor permission, repeatable for 9 credits)

EXSC 402: Internship in Exercise Science (junior standing & instructor permission, repeatable for 6 credits)

EXSC 420: Clinical Exercise Physiology (EXSC 340 & L)

EXSC 438: Advanced Strength & Conditioning (EXSC 330 & EXSC 340/L)

EXSC 440: Biomechanics (EXSC 330 & PHYS 101/L)

EXSC 444: Scientific Writing (EXSC 345)

EXSC 465: General Medical Conditions Across the Lifespan (BIOL 221 & BIOL 222)

EXSC 497: Mentored Research (permission of instructor)

EXSC 499A: Bachelor's Essay (permission of instructor)

EXSC 499B: Bachelor's Essay (permission of instructor)

HEAL 350: Epidemiology

*The total number of major credits is 57 with an addition 57 credits for required general education courses. This combination yields 108 total credits due to overlapping courses (MATH 104, PSYC 103). Students need a minimum of 122 credits to be eligible for graduation.

Program of Study Example Based on 2021-22 EXSC Major Requirements

Year	Fall Semester	Spring Semester	
Freshman	BIOL 101/L or 111/L (4) Foreign Language 1 (3) MATH (3) ENGL 110 (4) TOTAL HOURS: 14	BIOL 102/L or 112/L (4) Foreign Language 2 (3) MATH 104 (3) FYSE (3) Humanities 1 (3) TOTAL HOURS: 16	30 credits
Sophomore	EXSC 201 (3) EXSC 210 (3) EXSC 235 (3) BIOL 221 (4) Foreign Language 3 (3) TOTAL HOURS: 16	EXSC 211 (3) EXSC 250 (3) BIOL 222 (4) Foreign Language 4 (3) Elective (3) TOTAL HOURS: 16	32 credits
Junior	EXSC 330 (3) HEAL 257 (3) HIST 1 (3) Social Science (3) Elective (3) TOTAL HOURS: 15	EXSC 333 (3) PSYC 103 (3) HIST 2 (3) Humanities 2 (3) Elective (3) TOTAL HOURS: 15	30 credits
Senior	EXSC 340 (3) EXSC 340L (1) EXSC 345 (3) EXSC Elective 1 (3) Humanities 3 (3) Elective (3) TOTAL HOURS: 16	EXSC 424 (3) EXSC 458 (3) EXSC Elective 2 (3) Humanities 4 (3) Elective (3) TOTAL HOURS: 15	31 credits

*The total number of major credits is 57 with an addition 57 credits for required general education courses. This combination yields 108 total credits due to overlapping courses (MATH 104, PSYC 103). Students need a minimum of 122 credits to be eligible for graduation. Students are encouraged to complete courses towards a minor and/or prerequisite coursework for graduate school programs to reach their 122-credit requirement.

Maximizing your Degree in Exercise Science at the College of Charleston

Potential future career path	Consider getting involved on campus and/or within the local community	Consider joining a professional organization	Consider obtaining a certification while a student or immediately after graduation	Consider earning one or more minor degrees
<ul style="list-style-type: none"> ● Fitness/Wellness Industry 	<ul style="list-style-type: none"> ● Internships 	<ul style="list-style-type: none"> ● ACSM 	<ul style="list-style-type: none"> ● ACSM-EP* ● CSPA 	<ul style="list-style-type: none"> ● Business Administration ● Finance ● Marketing ● Entrepreneurship ● Sociology
<ul style="list-style-type: none"> ● Strength & Conditioning 	<ul style="list-style-type: none"> ● Internships 	<ul style="list-style-type: none"> ● NSCA 	<ul style="list-style-type: none"> ● NSCA-CSCS* ● CSPA ● NSCA-CPT ● TSAC-F 	<ul style="list-style-type: none"> ● Psychology ● Communications ● Business Administration
<ul style="list-style-type: none"> ● Coaching 	<ul style="list-style-type: none"> ● Volunteer coaching ● internships 		<ul style="list-style-type: none"> ● First Aid/CPR ● CDC-HEADS UP to Youth Sports ● Sport-specific coaching license 	<ul style="list-style-type: none"> ● Coaching ● Communication ● Psychology ● Foreign Language
<ul style="list-style-type: none"> ● Athletic Training ● Physical Therapy ● Occupational Therapy 	<ul style="list-style-type: none"> ● OPTA ● Internships 	<ul style="list-style-type: none"> ● NATA ● APTA ● AOTA 	<ul style="list-style-type: none"> ● First Aid/CPR- for professional rescuer ● NSCA-CSCS* 	<ul style="list-style-type: none"> ● Biology ● Business Administration ● Foreign Language ● Healthcare and Medical Services Management ● Medical Humanities ● Neuroscience ● Psychology ● Sociology
<ul style="list-style-type: none"> ● Nutrition 	<ul style="list-style-type: none"> ● Public Health Society ● Greenheart Project ● Lowcountry Food Bank 	<ul style="list-style-type: none"> ● ASN ● AND 		<ul style="list-style-type: none"> ● Business Administration ● Chemistry ● Neuroscience ● Psychology
<ul style="list-style-type: none"> ● Medicine 	<ul style="list-style-type: none"> ● AED ● Peer-mentors for Health Professions Advising ● CofC Nursing Club ● Public Health Society ● Minorities in Medicine 		<ul style="list-style-type: none"> ● EMT ● Medical scribe ● First Aid/CPR- for professional rescuer ● PCT 	<ul style="list-style-type: none"> ● Biology ● Biomedical Physics ● Chemistry ● Foreign Language ● Medical Humanities ● Neuroscience

Certification Exam Requirements

- Students should review the most current exam requirements on the organization's official website
- ACSM-EP Certification: Students should elect to take EXSC 420 and EXSC 438 to be prepared for relevant certification content
- NSCA-CSCS Certification: Students should elect to take EXSC 438 to be prepared for relevant certification content

Acronym Key

ACSM = American College of Sports Medicine

ACSM-EP = American College of Sports Medicine Exercise Physiologist Certification

AED = Alpha Epsilon Delta (Preprofessional health honor society)

AND = Academy of Nutrition and Dietetics

AOTA = American Occupational Therapy Association

APTA = American Physical Therapy Association

ASN = American Society for Nutrition

CDC HEADS UP = Centers for Disease Control & Prevention training on concussion in youth sports

CPR = Cardiopulmonary Resuscitation

CSPS = National Strength & Conditioning Association Special Populations Certification

EMT = Emergency Medical Technician Certification

NATA = National Athletic Trainers' Association

NSCA = National Strength & Conditioning Association

NSCA-CSCS = Certified Strength & Conditioning Specialist

NSCA-CPT = National Strength & Conditioning Association Certified Personal Trainer

OPTA = Occupational & Physical Therapy Association

PCT = Patient Care Technician Certification

TSAC-F = Tactical Strength & Conditioning Facilitator Certification

POSM: Update Major or Minor Catalog Year

Update Major or Minor Catalog Year

- Your **Current Program of Study** will appear at the top of the page. Your **General Education Catalog Year** is listed for informational purposes only. You cannot change the catalog year for your general education requirements.

Your Current Program of Study:
Your General Education Requirements Catalog Year (cannot be changed):

	Type	Description	School	Degree	Catalog Year
Select	MAJOR	Sociology	School of Humanities, Social Sc	Bachelor of Science	2012 Fall
Select	MAJOR	Undecided	General Studies	Undecided - Undergraduate	2010 Fall

- Select the **Major or Minor** for which you would like to update your catalog year to the current term. A catalog year includes fall, spring and summer. Example: Catalog year 2013-14 includes the fall, spring and summer semesters.
- If you would like to update the catalog year for all your majors and minors, please click the **Select All Majors and Minors** button located below your **Current Program of Study** section.

Your Current Program of Study:
Your General Education Requirements Catalog Year (cannot be changed):

	Type	Description	School	Degree	Catalog Year
Select	MAJOR	Sociology	School of Humanities, Social Sc	Bachelor of Science	2012 Fall
Select	MAJOR	Undecided	General Studies	Undecided - Undergraduate	2010 Fall

- Click the **CONTINUE** button if you are satisfied with your selection.

Current Selection:
Major/Minor:

Selection Status:

Current Exercise Science Program Course Titles, Descriptions, & Prerequisites

REQUIRED COURSES

BIOL 221 Human Anatomy and Physiology I (4)

An introduction to the gross morphology, microscopic anatomy, structure and function of the nervous, muscular, skeletal, and cardiac systems of the human body. Lectures three hours per week; laboratory three hours per week. This course is intended for pre-allied health, physical education, and pre-nursing majors.

Prerequisite(s): BIOL 111/BIOL 111L, BIOL 112/BIOL 112L

BIOL 222 Human Anatomy and Physiology II (4)

An introduction to the gross morphology, microscopic anatomy, structure and function of the vascular, respiratory, renal, digestive, immune, endocrine, and reproductive systems of the human body. Lectures three hours per week; laboratory three hours per week. This course is intended for pre-allied health, physical education, and pre-nursing majors.

Prerequisite(s): BIOL 221

MATH 104 Elementary Statistics (3)

Probability concepts, descriptive statistics, binomial and normal distributions, confidence intervals and tests of hypotheses.

Prerequisite(s): MATH 101 or placement

Or

MATH 250 Statistical Methods I (3)

Course topics will include descriptive statistics, probability, probability distributions, estimation, hypothesis testing, correlation and simple linear regression. Statistical quality control, analysis of variance and other topics will be introduced as time permits. A statistics software package will be used.

Prerequisite(s): MATH 105 with a C- or better or MATH 111 or MATH 120 or permission of instructor.

PSYC 103 Introduction to Psychological Science (3)

An introduction to the scientific study of behavior. Topics include research methods and statistics in psychology, nervous system and the brain, sensation and perception, learning, memory, social psychology and behavior disorders.

Prerequisite(s): None

CORE REQUIREMENTS

EXSC 201 Foundations in Exercise Science and Physical Education (3)

A required introductory course for exercise science and physical education majors. Content will include a study of history, principles, objectives, philosophy, current trends and issues, and literature related to physical education, health, and exercise science.

Prerequisite(s): None

EXSC 210 Cardiovascular Assessment and Exercise Prescription (3)

This course is designed to give the student an initial fitness assessment and exercise prescription experiences. Basic concepts of fitness assessment and principles of physical training will be covered. Students will implement an individualized training program and demonstrate proficiency in assessment techniques of cardiovascular fitness and body composition. Student learning will be solidified through application-based experiences.

Prerequisite(s): None

EXSC 211 Neuromuscular Assessment and Exercise Prescription (3)

This course is designed to give the student initial neuromuscular assessment and prescription experiences. Basic concepts of muscular fitness, flexibility, joint function, coordination, and balance will be covered. Students will implement an individualized training program and demonstrate proficiency in assessment techniques of various muscular fitness and flexibility skills. Student learning will be solidified through application-based experiences.

Prerequisite(s): None

EXSC 235 Motor Skill Behavior (3)

This course will cover the main theories and concepts of motor skill behavior and their application to practitioner-based settings. Students will be introduced to concepts related to motor development, motor learning, and motor control and how they can be used in a variety of settings. Students will achieve a broad understanding of how to apply these theories to teaching, coaching, exercise and therapeutic environments. Student learning will be solidified through application-based experiences.

Prerequisite(s): None

EXSC 250 Providing Healthcare for the Physically Active (3)

This course is designed to provide students with background information, guidelines and recommendations for preventing, recognizing, and correctly managing activity related injuries and conditions. Students will learn the role of proper physical training and nutrition in injury prevention, injuries and conditions common to active individuals of various ages, and strategies for managing acute and chronic medical conditions. Students will also learn to create a safe environment for physical activity and how to handle non-emergency and emergency health care situations when an athletic trainer or physician is not available. Student learning will be solidified through application-based experiences.

Prerequisite(s): None

EXSC 330 Kinesiology (3)

This course explores human movement with an emphasis placed on functional anatomy. Students will develop an understanding of joint specific and whole-body movements through the application of basic kinesiological principles. Student learning will be solidified through application-based experiences.

Prerequisite(s): EXSC 211, EXSC 235, BIOL 221

EXSC 333 Exercise Nutrition (3)

This course addresses the main aspects of nutrition as related to exercise and physical performance. Emphasis will be placed on the energy systems in exercise, components of nutrients, assessment of nutritional needs and diet modification for physically active individuals.

Prerequisite(s): EXSC 201, HEAL 257, BIOL 222; or permission of the instructor.

EXSC 340 Exercise Physiology (3)

The major objective of this course is to assist the student in gaining an understanding and appreciation of the physiological and metabolic adaptations accompanying physical work.

Prerequisite(s): EXSC 210, EXSC 211, BIOL 221, BIOL 222

Co-requisite(s): EXSC 340L

EXSC 340L Exercise Physiology Laboratory (1)

This course will reinforce principles and theories covered in EXSC 340 Exercise Physiology by providing hands-on experiences where students can apply principles and theories related to exercise physiology to various populations.

Prerequisite(s): EXSC 210, EXSC 211, BIOL 221, BIOL 222

Co-requisite(s): EXSC 340

EXSC 345 Research Design and Analysis (3)

The class will focus on data collection and interpretation in health and exercise science, including common physiological, biomechanical, anatomical, and health-related variables. Emphasis is placed on the development of a clinical research question and the appropriate procedures to further the body of knowledge in the area of health and exercise science.

Prerequisite(s): EXSC 210, EXSC 211, MATH 104 or MATH 250

EXSC 424 Physical Activity Considerations for Chronic Disease and Special Populations (3)

The human body undergoes many changes throughout the lifespan, with significant alterations occurring in youth and in the elderly that require unique physical activity considerations. Further aberrations to “normal” conditions are experienced in adulthood during various health conditions and disease states. This course will explore the pathophysiology, disease management, medications, exercise testing and prescription, and responses of activity programs for individuals in need of special considerations. Target populations will include youth, geriatric, and pregnancy, as well those suffering from AIDS, cancer, neurological conditions, mental health issues, and other chronic diseases. Student learning will be solidified through application-based experiences.

Prerequisite(s): EXSC 340, EXSC 340L

EXSC 458 Administration and Management in Exercise Science (3)

A course covering the organization, planning, implementation and administration of physical activity, sport, fitness, wellness, and healthcare programs.

Prerequisite(s): EXSC 201, senior status

HEAL 257 Principles of Nutrition (3)

A study of nutrients and current dietary guidelines. The course will include a personal dietary and activities analysis and focus on the relationship of food choices to lifestyle diseases and/or premature death. Emphasis will be on health-oriented decision making and personal responsibility.

Prerequisite(s): None

COMPLETE 6 CREDITS HOURS SELECTED FROM THE FOLLOWING

EXSC 320 Special Topics in Exercise Science (3)

A course designed to cover and supplement a variety of topics not otherwise offered in the list of directed electives in exercise science. Topics of interest to students and faculty will be offered on a rotating random basis according to interest

Prerequisite(s): Junior status, repeatable up to 9 credits.

EXSC 350 Analysis and Conduct of Group Exercise Leadership (3)

This course provides the theoretical and practical knowledge necessary to design and instruct safe, effective group exercise classes to participants of varying skill and fitness levels. Student learning will be solidified through application-based experiences.

Prerequisite(s): EXSC 201, EXSC 210, EXSC 211

EXSC 355 Exercise Psychology (3)

This course will cover the theories and constructs that underlie behavior in clinical, general, and performance populations. Students will be introduced to theories and concepts that explain behavior; including personality, motivation, group dynamics, imagery, self-efficacy, and behavior change. Students will achieve a broad understanding of how to apply these theories and constructs to teaching, coaching, exercise, and therapeutic environments.

Prerequisite(s): EXSC 201, PSYC 103

EXSC 401 Independent Study in Exercise Science (1-3)

Designed to give the candidate individually structured study and experience in allied areas such as cardiac rehabilitation, athletic training, pre- physical therapy, fitness and recreation, or others approved by the department.

Prerequisite(s): EXSC 201 and permission of instructor, repeatable up to 9 credits.

EXSC 402 Internship in Exercise Science (3)

Placement in cooperating local businesses, agencies, and organizations in areas related to exercise science. The field experience is a laboratory class that requires participation in the on-going activities of the assigned internship in addition to online seminars and activities.

Prerequisite(s): Junior status and permission of instructor, students are responsible for transportation to off campus internship sites, repeatable up to 6 credits.

EXSC 420 Clinical Exercise Physiology (3)

This class will provide students with an understanding of exercise physiology for clinical populations. Emphasis is placed on the acute responses and chronic adaptations to exercise in patients at risk for or diagnosed with cardiac, pulmonary, and metabolic diseases. Specific topics include: pathophysiology of the disease process, clinical assessment of disease severity, diagnostic testing, and exercise programming considerations for clinical populations including cardiovascular, metabolic, and respiratory conditions. Student learning will be solidified through application-based experiences.

Prerequisite(s): EXSC 340, EXSC 340L

EXSC 438 Advanced Topics in Resistance Training and Conditioning (3)

This course is designed to apply theoretical knowledge in the areas of exercise science toward the development of an optimal resistance training and conditioning program. Emphasis will be placed on achieving peak athletic performance through a long-term manipulation of the program design.

Prerequisite(s): BIOL 221, BIOL 222, EXSC 340, EXSC 340L, or permission of instructor

EXSC 440 Biomechanics (3)

This course will focus on the mechanical basis of human movement with some consideration given to the anatomical constraints that influence normal, athletic, and pathological movement. Topics covered will include linear and angular kinematics and kinetics of movement, equilibrium, and fluid mechanics.

Prerequisite(s): EXSC 330, PHYS 101, PHYS 101L

EXSC 444 Scientific Writing and Data Analysis (3)

A study of general principles related to better understanding the literature in exercise science. The class will focus on how to write effectively and efficiently. Students will write abstracts of different lengths, research proposals, and parts of the manuscript, including an effective introduction, materials and methods, results, discussion, conclusions and proper referencing.

Prerequisite(s): Senior status

EXSC 465 General Medical Conditions Across the Lifespan (3)

This course focuses on general medical conditions; their mechanisms of acquisition, signs, symptoms, referral criteria and physical activity consideration guidelines. Students will explore treatment options and the body's physiological and psychological response to pharmacological agents. Methods of identifying risk factors and preventing general medical conditions will also be discussed. Student learning will be solidified through application-based experiences.

Prerequisite(s): BIOL 221, BIOL 222

EXSC 497 Mentored Research (3)

Mentored research will be a class designed to allow for student growth, knowledge, and experiences in an applied setting outside the traditional classroom environment. Research areas will include fitness, wellness, cardiac rehabilitation, animal research, and strength and conditioning. Student work may include animal care and/or harvesting specimens needed to answer the research question.

Prerequisite(s): permission of instructor

EXSC 499A Bachelor's Essay (3)

Semester one of a two semester intensive research and writing course for accomplished and motivated upper-level students under the close supervision of a faculty member in the department or program. Students must take the initiative in seeking a faculty member to help in the design and supervision of the project. This is an individual enrollment course, and registration is carried out through consultation with the faculty mentor.

Prerequisite(s): Permission of the instructor and Department/Program approval prior to registration. Individual departments or programs may prescribe particular requirements for eligibility for the bachelor's essay, particular procedures for the approval of proposals, and/or particular guidelines for the projects themselves. Honor's College student.

EXSC 499B Bachelor's Essay (3)

Semester two of a two semester intensive research and writing course for accomplished and motivated upper-level students under the close supervision of a faculty member in the department or program. Students must take the initiative in seeking a faculty member to help in the design and close supervision of the project. This is an individual enrollment course, and registration is carried out through consultation with the faculty mentor.

Prerequisite(s): EXSC 499A

HEAL 350 Epidemiology (3)

This course introduces the basic concepts of epidemiology and biostatistics as applied to public health problems. Emphasis is placed on the principles and methods of epidemiologic investigation, appropriate summaries and displays of data, and the use of classical statistical approaches to describe the health of populations.

Prerequisite(s): HEAL 215