

EXERCISE SCIENCE (EXSC)

EXSC 100 Anatomical Kinesiology Credits: 3

This course is designed to develop the students proficiency in identifying the structures and functions of the musculoskeletal system.

Fall: All Years **Spring:** All Years

Course Outline (<https://eservices.minnstate.edu/registration/rest/rcld/0075/curricld/00139992/>)

EXSC 100L Anatomical Kinesiology Lab Credits: 1

This course is designed to develop the students proficiency in identifying the structures and functions of the musculoskeletal system.

Fall: All Years **Spring:** All Years

Course Outline (<https://eservices.minnstate.edu/registration/rest/rcld/0075/curricld/00139996/>)

EXSC 101 Introduction to Exercise Science Credits: 2

This course will introduce students to the career options available with an Exercise Science degree. Students will gain the knowledge and skills required for becoming an Exercise Scientist. Classroom learning experiences will be provided, as well as guest speakers who will provide first-hand knowledge of the profession. Students will also be exposed to these professions with hands on learning experiences in the field via volunteer job shadowing/observation with professionals in these areas.

Fall: All Years

Course Outline (<https://eservices.minnstate.edu/registration/rest/rcld/0075/curricld/00167764/>)

EXSC 110 Introduction to Health Professions Credits: 2

This course will introduce students to the professions of Physical Therapy, Occupational Therapy, Athletic Training, and Speech-Language Pathology, as well as Physician Assistant, Chiropractic, Nursing, etc. Students will also be exposed to these health care professions with hands on learning experiences.

Spring: All Years

Course Outline (<https://eservices.minnstate.edu/registration/rest/rcld/0075/curricld/00179819/>)

EXSC 180 Principles of Fitness and Wellness Credits: 2

This course is designed to teach the components of fitness and the relationship of ones fitness to overall wellness. Topics will focus on understanding the components of Health-Related Fitness (cardiovascular, muscular strength, muscular endurance, flexibility, and body composition). Fundamental knowledge in the areas of nutrition, stress management, and behavior modification will be introduced and the implications of these variables on wellness will be discussed.

Spring: Department Discretion

Course Outline (<https://eservices.minnstate.edu/registration/rest/rcld/0075/curricld/00181386/>)

EXSC 225 Nutrition Credits: 3

This is an introductory course investigating nutrition from a scientific perspective. This course will introduce the nutrients and their work in the body from chemical, metabolic, and physiologic perspectives. Then, this information will help students learn to use this information to understand energy balance, weight control, and nutrition through the lifespan.

Fall: All Years **Spring:** Department Discretion **Summer** Department Discretion

Course Outline (<https://eservices.minnstate.edu/registration/rest/rcld/0075/curricld/00156583/>)

EXSC 286 Special Topics Credits: 1-4

This course is designed to provide lower division students an opportunity to experience a special or experimental curriculum enrichment course.

Pre-Requisite : EXSC 100 AND EXSC 101

Fall: Department Discretion **Spring:** Department Discretion
Course Outline (<https://eservices.minnstate.edu/registration/rest/rcld/0075/curricld/00147920/>)

EXSC 300 Biomechanics of Human Motion Credits: 3

This course includes both lecture and lab experience to describe, analyze, and interpret the mechanical functions of human movement.

Pre-Requisite : EXSC 100

Fall: All Years **Spring:** All Years

Course Outline (<https://eservices.minnstate.edu/registration/rest/rcld/0075/curricld/00140000/>)

EXSC 325 Nutrition & Exercise Credits: 2

This course is intended to teach students an intermediate to advanced understanding of sport and exercise nutrition for the purpose of human performance and physical activity. Topics of study will include carbohydrate, protein, fat, vitamin, mineral, and water requirements of active populations, as well as the use of nutritional ergogenic aids for performance enhancement.

Pre-Requisite : EXSC 225 AND EXSC 350 OR EXSC 225 AND BIOL 200 AND CHEM 121 OR EXSC 225 AND BIOL 200 AND CHEM 231

Fall: All Years **Spring:** Department Discretion **Summer** Department Discretion

Course Outline (<https://eservices.minnstate.edu/registration/rest/rcld/0075/curricld/00140007/>)

EXSC 350 Exercise Physiology Credits: 3

This course includes lecture and lab experience to define and interpret the adaptations of the human organism to physical activity.

Pre-Requisite : EXSC 100

Fall: All Years **Spring:** Department Discretion **Summer** Department Discretion

Course Outline (<https://eservices.minnstate.edu/registration/rest/rcld/0075/curricld/00140010/>)

EXSC 350L Exercise Physiology Lab Credits: 1

This course includes lecture and lab experience to define and interpret the adaptations of the human organism to physical activity.

Fall: All Years **Spring:** Department Discretion **Summer** Department Discretion

Course Outline (<https://eservices.minnstate.edu/registration/rest/rcld/0075/curricld/00140011/>)

EXSC 360 Athletic Enhancement, Human Performance, & Exercise Leadership Credits: 2

This course introduces students to the field of Athletic enhancement, human performance, and leadership skills involved in individual and group training. The class will cover specifics including: speed, agility, power, proper development of exercise programming in the athletic/human performance arena, and proper development and leadership of exercise instruction with individual training and group training programming. Students completing this class will be prepared to sit for the American College of Sports Medicine Group Training Certification and/or Certified Personal Trainer Certification, and/or National Strength and Conditioning Certified Personal Trainer Certification.

Pre-Requisite : EXSC 350 AND EXSC 350L

Spring: All Years

Course Outline (<https://eservices.minnstate.edu/registration/rest/rcld/0075/curricld/00164906/>)

EXSC 375 Research Methods Credits: 2

This course is designed to introduce students to the basic methods of research in Exercise Science. Emphasis will be placed on how to select a research project, how to conduct a literature search, how to write a project proposal, and methods for data collection. This course is designed to help students be successful in EXSC 475 Capstone Research.

Pre-Requisite : EXSC 100 AND EXSC 300 AND EXSC 350

Fall: All Years

Course Outline (<https://eservices.minnstate.edu/registration/rest/rcld/0075/curricld/00182340/>)

EXSC 380 Community and Corporate Wellness and Health Promotion Credits: 3

This course will introduce students to the field of Community Health and Corporate Wellness. Topics will include the history of Employee Health Promotion, workplace health and wellness services, design and implementation of health promotion programming in communities, schools and business, health care policy and legal issues, evidence based decision making in the community health and corporate wellness field, program assessment and evaluation tools, and program design and implementation.

Fall: All Years **Spring:** All Years

Course Outline (<https://eservices.minnstate.edu/registration/rest/rcld/0075/curricld/00198243/>)

EXSC 390 Fitness Assessment Credits: 2

This course is designed to provide students with the scientific theories and practical application for fitness assessment. Students successfully completing this course should be prepared for the fitness assessment components of the American College of Sports Medicine certification in Health & Fitness Specialist.

Pre-Requisite : EXSC 300 AND EXSC 350 AND EXSC 225 OR PE 385 AND PE 391 AND EXSC 225 OR PE 385 AND EXSC 350 AND EXSC 225 OR PE 391 AND EXSC 300 AND EXSC 225

Fall: All Years **Spring:** All Years

Course Outline (<https://eservices.minnstate.edu/registration/rest/rcld/0075/curricld/00164908/>)

EXSC 400 Motor Learning & Development Credits: 2

This course is designed to study motor learning and development through the lifespan of humans. Students will develop skills in analyzing and identifying learning and developmental stages in fundamental motor patterns.

Pre-Requisite : EXSC 100

Fall: All Years **Spring:** All Years

Course Outline (<https://eservices.minnstate.edu/registration/rest/rcld/0075/curricld/00140050/>)

EXSC 401 Human Kinematics Credits: 3

This course is designed for students to further develop their analytical skills related to human motion. Students will design, capture, and utilize movement analysis software to develop an advanced skill and scientific understanding in kinematic analysis. Both quantitative and qualitative kinematics of human gait and other movement outcomes will be emphasized. These kinematic studies prepare students to assess, interpret, and instruct the proper mechanics and/or adaptations of human movement and exercise.

Pre-Requisite : EXSC 100 AND EXSC 300

Spring: Department Discretion

Course Outline (<https://eservices.minnstate.edu/registration/rest/rcld/0075/curricld/00181363/>)

EXSC 450 Advanced Exercise Physiology Lecture/Seminar Credits: 3

This course is designed to advance the students knowledge in the physiological dynamics of the organ systems of the human body in response to exercise.

Pre-Requisite : EXSC 100 AND BIOL 200 AND EXSC 300 AND EXSC 350

Spring: All Years

Course Outline (<https://eservices.minnstate.edu/registration/rest/rcld/0075/curricld/00165036/>)

EXSC 450L Advanced Exercise Physiology Lab Credits: 1

This course is designed to have the student use critical thinking in the application of laboratory research to a physiology exercise of interest. The student will demonstrate the ability to relate the research in an in-depth thesis-style written format and an oral presentation.

Spring: All Years

Course Outline (<https://eservices.minnstate.edu/registration/rest/rcld/0075/curricld/00165015/>)

EXSC 475 Capstone Research Credits: 3

This course will teach Exercise Science majors the skills and knowledge necessary to perform discipline-specific original research. Content examines the application and interpretation of statistical methods and research design in the field of exercise, and human performance by completing original research.

Pre-Requisite : MATH 200 OR PSYC 200 AND EXSC 375 OR EXSC 488 OR ENVS 390 and Requires minimum credits: 60

Fall: All Years **Spring:** All Years

Course Outline (<https://eservices.minnstate.edu/registration/rest/rcld/0075/curricld/00173880/>)

EXSC 480 Principles of Training & Conditioning Credits: 2

This course is designed to provide students with the scientific theories and practical applications for exercise design and prescription. This course will apply concepts of exercise physiology, anatomical kinesiology, biomechanics, nutrition, and facility planning and management. This course is also designed to include content standards related to the NSCA, National Strength and Conditioning Associations Certified Strength Conditioning Specialist, CSCS, exam.

Pre-Requisite : EXSC 300 AND EXSC 325 AND EXSC 350 AND EXSC 390

Spring: All Years

Course Outline (<https://eservices.minnstate.edu/registration/rest/rcld/0075/curricld/00140059/>)

EXSC 486 Topics in Exercise Science Credits: 1-4

This course is designed to provide upper division students an opportunity to experience a special or experimental curriculum enrichment course.

Fall: Department Discretion **Spring:** Department Discretion

Course Outline (<https://eservices.minnstate.edu/registration/rest/rcld/0075/curricld/00147921/>)

EXSC 488 Professional Communication Credits: 3

Students will conduct multiple review of literature studies in the field of Exercise Science and develop related professional presentations. In addition, this course is designed to prepare students for entry into the job market. Students will develop a Resume, Application Essay/Personal Statement, Cover Letter, and interviewing skills.

Pre-Requisite : Requires minimum credits: 75

Fall: All Years

Course Outline (<https://eservices.minnstate.edu/registration/rest/rcld/0075/curricld/00181402/>)

EXSC 490 Exercise Prescription Credits: 2

This course is designed to provide students with the scientific theories and practical application for fitness assessment and exercise prescription. Students successfully completing this course should be prepared for completion of the American College of Sports Medicine certification Exercise Physiologist Certified.

Pre-Requisite : EXSC 390 and Requires minimum credits: 75

Fall: All Years

Course Outline (<https://eservices.minnstate.edu/registration/rest/rcld/0075/curricld/00165035/>)

EXSC 494 Directed Studies Credits: 1-4

This course provides students the opportunity to design a curricular experience or research project under the direction of a faculty member in the Exercise Science Program.

Fall: Department Discretion **Spring:** Department Discretion **Summer** Department Discretion

Course Outline (<https://eservices.minnstate.edu/registration/rest/rcld/0075/curricld/00147922/>)

EXSC 495 Fitness Specialist Training Credits: 1-3

This class will allow students to provide one on one, small group training or group training for credit.

Pre-Requisite : EXSC 350 AND EXSC 390 AND EXSC 490

Fall: All Years **Spring:** All Years

Course Outline (<https://eservices.minnstate.edu/registration/rest/rcld/0075/curricld/00194356/>)

EXSC 499 Professional Practicum Credits: 1-12

To provide an opportunity for a student who works in the area of physical education or human performance in an internship program.

Fall: All Years **Spring:** All Years **Summer** All Years

Course Outline (<https://eservices.minnstate.edu/registration/rest/rcld/0075/curricld/00140118/>)