

Exercise Science and Rehabilitation

The Exercise Science and Rehabilitation degree is developed to promote thoughtful students who engage in the science, theory, and practice of enhancing quality of life for individuals. The Exercise Science and Rehabilitation Major is one of a kind bachelor's degree major with a rehabilitation focus. A component of Minot State University's vision is to inspire scholarship and creative activity among students, faculty, and staff. This vision provides faculty with the direction to enhance student's opportunity to become critical thinkers who can communicate effectively. The Minot State University Exercise Science and Rehabilitation Degree's mission is to provide students with an educational experience that will allow them to pursue exercise science as a field and obtain certification in various National Strength and Conditioning Association certifications and/or American College of Sports Medicine certifications that require a bachelor's degree. In addition, the degree is designed to provide students with a bachelor's degree that would provide the necessary course work in pre-professional degrees based on the route the student chooses. Examples of some of the pre-professional degree routes are: Athletic Training, Physical Therapy, and Medical School.

The Exercise Science and Rehabilitation BS utilizes shared faculty and courses within the Kinesiology Department, as well as the limited number of new courses. The Exercise Science and Rehabilitation BS degree contrasts with the current Corporate Fitness and Wellness Management BS degree in that it has additional science courses, therapeutic exercise courses, and graded exercise testing courses. The program requirements are listed below.

Students should evaluate the professional school they plan to attend for their degree and plan their pre-professional program based on the requirements of those schools.

- A minimum of a 2.5 GPA within the Exercise Science and Rehabilitation major with no support or required Exercise Science and Rehabilitation course grades below a "C" required for graduation.

Bachelor of Science with a Major in Exercise Science and Rehabilitation

Exercise Science and Rehabilitation BS Program Requirements

General Education		38
Required Support Courses		
May be used to satisfy General Education Requirements		
KIN 120	Strength Training	1
KIN 126	Group Exercise	1
BIOL 220	Anatomy and Physiology I	4
BIOL 221	Anatomy and Physiology II	4
MATH 103	College Algebra	4
MATH 210	Elementary Statistics	4
PSY 111	Introduction to Psychology	3
Required ESR Courses		
ATR 207	Prevention and Care of Injuries	2
ESR 206	Medical Conditions	3
ESR 226	Methods of Teaching Group Exercise	2
ESR 227	Strength and Conditioning Programming Principles and Methods	2
ESR 303	Therapeutic Exercise I	3
ESR 304	Therapeutic Exercise II	3
ESR 308	Biomechanics	2
ESR 305	Therapeutic Exercise III	3
ESR 306	Health Risk Appraisal	2
ESR 316	Graded Exercise Testing and Prescription	2
ESR 323	Basic EKG for Exercise Science	2
ESR 342	Exercise Programming for Older Adults	2
ESR 414	Pathomechanics	2
KIN 225	Fitness Leadership	2
KIN 334	Nutrition for Physical Performance	2
KIN 301	Psychomotor Development and Learning	3
KIN 407	Psychology of Physical Education and Athletes	2
KIN 431	Kinesiology	3
KIN 433	Physiology of Exercise	3
KIN 441	Evaluation of Psychomotor Performance	3

KIN 497	Practicum in CFWM and ESR	1-18
HMS 215	Principles of Pharmacology	3

Electives as required to meet 120 credits

Students seeking professional certification must follow internship requirements for that certification.

Students must complete one of the options.

Total Hours **111-128**

Exercise Science and Rehabilitation Major Option A: Professional Certification Route

ESR 317	Graded Exercise Testing Lab	1
ESR 425	Exercise Science and Rehabilitation Capstone	1
HMS 208	Medical Terminology	2

Exercise Science and Rehabilitation Major Option B: Pre-Athletic Training

ESR 317	Graded Exercise Testing Lab	1
ESR 425	Exercise Science and Rehabilitation Capstone	1
CHEM 121 or CHEM 118	General Chemistry I General, Organic, and Biological Chemistry	5
BIOL 150 or BIOL 151	General Biology I General Biology II	4
PSY 250	Developmental Psychology	3
HMS 208	Medical Terminology	2
Elect from (4-5 cr):		
PHYS 211 or PHYS 251	College Physics I University Physics I	4

Exercise Science and Rehabilitation Major Option C: Pre-Physical Therapy

CHEM 121	General Chemistry I	5
CHEM 122	General Chemistry II	5
BIOL 150	General Biology I	4
BIOL 151	General Biology II	4
BIOL 220	Anatomy and Physiology I	4
BIOL 221	Anatomy and Physiology II	4
MATH 103	College Algebra	4
MATH 210	Elementary Statistics	4
PHYS 211	College Physics I	4
PHYS 212	College Physics II	4
PSY 250	Developmental Psychology	3
PSY 270	Psychological Disorders and Treatments	3
SOC 110	Introduction to Sociology	3

Exercise Science and Rehabilitation Major Option D: Pre-Occupational Therapy

BIOL 150 or BIOL 151	General Biology I General Biology II	4
CHEM 121 or CHEM 118	General Chemistry I General, Organic, and Biological Chemistry	5
BIOL 220	Anatomy and Physiology I	4
BIOL 221	Anatomy and Physiology II	4
MATH 103	College Algebra	4
MATH 210	Elementary Statistics	4
PSY 111	Introduction to Psychology	3
PSY 250	Developmental Psychology	3
PSY 270	Psychological Disorders and Treatments	3

SOC 110	Introduction to Sociology	3
Gen Ed Humanities requirements 6 credits in at least 2 areas.		

Exercise Science and Rehabilitation Major Option E: Pre-Physician Assistant

CHEM 121	General Chemistry I	5
CHEM 122	General Chemistry II	5
BIOL 220	Anatomy and Physiology I	4
BIOL 221	Anatomy and Physiology II	4
MATH 103	College Algebra	4
MATH 210	Elementary Statistics	4
PSY 250	Developmental Psychology	3
PSY 270	Psychological Disorders and Treatments	3
BIOL 215	Genetics	4
BIOL 202	Introductory Microbiology	4
BIOL 240	Biometry	4

Elect 6 credits from:

CHEM 341	Organic Chemistry I	5
CHEM 342	Organic Chemistry II	5
CHEM 480L	Biochemistry Laboratory	2
CHEM 481	Biochemistry I	3
CHEM 482	Biochemistry II	3
BIOL 150	General Biology I	4
BIOL 151	General Biology II	4
BIOL 480	Molecular Biology	4

Exercise Science and Rehabilitation Major Option F: Pre-Chiropractic

CHEM 121	General Chemistry I	5
CHEM 122	General Chemistry II	5
CHEM 341	Organic Chemistry I	5
CHEM 342	Organic Chemistry II	5
BIOL 150	General Biology I	4
BIOL 220	Anatomy and Physiology I	4
BIOL 221	Anatomy and Physiology II	4
MATH 103	College Algebra	4
MATH 210	Elementary Statistics	4
PHYS 211	College Physics I	4
PHYS 212	College Physics II	4
HUM 251	Humanities	3
HUM 252	Humanities	3
HUM 253	Humanities	3

Exercise Science and Rehabilitation Major Option G: Pre-Med

SOC 110	Introduction to Sociology	3
MATH 103	College Algebra	4
MATH 210	Elementary Statistics	4
CHEM 121	General Chemistry I	5
CHEM 122	General Chemistry II	5
CHEM 341	Organic Chemistry I	5
CHEM 342	Organic Chemistry II	5
CHEM 481	Biochemistry I	3
CHEM 482	Biochemistry II	3
BIOL 220	Anatomy and Physiology I	4
BIOL 221	Anatomy and Physiology II	4

BIOL 150	General Biology I	4
BIOL 151	General Biology II	4
PHYS 211	College Physics I	4
PHYS 212	College Physics II	4
PSY 111	Introduction to Psychology	3
Electives Recommended coursework Biochemistry, Genetics, Cell biology		

This concentration will provide a background for exercise professionals to assist individuals at varying stages throughout the lifespan to become or stay active. In addition, this concentration will provide education in the recognition of proper and improper movement patterns, as well as how to perform and instruct appropriate therapeutic exercises. BIOL 220 Anatomy and Physiology I or BIOL 115 Concepts of Anatomy and Physiology is a required support course for this concentration, both of these courses are science general education options

Exercise Rehabilitation Concentration

ESR 308	Biomechanics	2
ESR 414	Pathomechanics	2
KIN 431	Kinesiology	3
Choose 6 credits from below:		
ESR 303	Therapeutic Exercise I	3
ESR 304	Therapeutic Exercise II	3
ESR 305	Therapeutic Exercise III	3
KIN 441	Evaluation of Psychomotor Performance	3
Total Hours		19

Program Description: BIOL 220 Anatomy and Physiology I or BIOL 115 Concepts of Anatomy and Physiology is a required support course for this concentration, both of these courses are science general education options.

Exercise Science Concentration

KIN 431	Kinesiology	3
KIN 433	Physiology of Exercise	3
ESR 306	Health Risk Appraisal	2
ESR 323	Basic EKG for Exercise Science	2
ESR 316	Graded Exercise Testing and Prescription	2
ESR 317	Graded Exercise Testing Lab	1
Total Hours		13

The courses required for the Strength and Conditioning Concentration would provide students with the knowledge to become strength and conditioning coaches for individuals or teams. BIOL 220 Anatomy and Physiology I or BIOL 115 Concepts of Anatomy and Physiology is a required support course for this concentration, both of these courses are science general education options.

Strength and Conditioning Concentration

KIN 120	Strength Training	1
ESR 227	Strength and Conditioning Programming Principles and Methods	2
ESR 308	Biomechanics	2
KIN 334	Nutrition for Physical Performance	2
KIN 431	Kinesiology	3
KIN 433	Physiology of Exercise	3
Total Hours		13

Sports Medicine Concentration

ATR 207	Prevention and Care of Injuries	2
KIN 210	First Aid and CPR	1
KIN 431	Kinesiology	3
Select two of the following:		6
ESR 206	Medical Conditions	

ESR 304	Therapeutic Exercise II	
ESR 308	Biomechanics	
Total Hours		12