



Suggested 4 Year Course Plan: Exercise Science Major (2017-2018)

	Fall	Spring
First Year	BY 111 – Biology for Majors I (4) BY 111L – Biology for Majors I Lab (0) EH 101 – Written Communication (3) MS 101 – College Algebra (3) AS 100 – First Year Seminar (WC only) (3) or HS 105 (UC) (3) PY 101 – Intro to Psychology (3) <div style="text-align: right;">16 Credits</div>	EH 102 – Reading & Research Writing (3) MS 205 – Statistics (3) HS 102 – Careers in the Helping Professions (3) CH/IN/FH/SH 101 – Modern Language (3) Speech LE course - (3) WH 102 Exercise Science (1.0) (WC & UC) <div style="text-align: right;">16 Credits</div>
Second Year	CY 121 – General Chemistry I (4) CY 121L – General Chemistry I Lab (0) BY 209 – A&P I (4) BY 209L - A&P I Lab (0) CH/IN/FH/SH 102 – Modern Language (3) MC 216 – Intro to Arts in Healthcare (3) WH, LF, or LS – Lifetime Fitness (1) (WC only) EX 201 Exercise Science Practicum (1) <i>Submit Exercise Science application</i> <div style="text-align: right;">15-16 Credits</div>	CY 122 – General Chemistry II (4) CY 122L – General Chemistry II lab (0) BY 210 – A&P II (4) BY 210L A&P II Lab (0) History LE course (3) AY 101 (3) WH, LF, or LS – Lifetime Fitness (1) (WC only) Admissions decisions announced Begin Full time Exercise Science program in Fall Note: Up to 6 credits of LE courses can be outstanding prior to starting ExSci program <div style="text-align: right;">14-15 Credits</div>
Third Year	EX 304 – Foundations of Ex Sci (3) PS 121 – General Physics I (4) PS 121L – General Physics I lab (0) EX 300 – Kinesiology (4) EX 300L – Kinesiology Lab (0) PY 202 – Human Growth & Development (3) HS 201 Clinical Medical Communications (3) <div style="text-align: right;">17 Credits</div>	EX 301 – Biomechanics (3) PS 122 – General Physics II (4) PS 122L – General Physics II lab (0) EX 305 – Physiology of Exercise (3) PY 309 – Abnormal Psychology (3) Literature LE course (3) <div style="text-align: right;">16 Credits</div>
Fourth Year	EX 402 – Fitness Assessment & Prescription (3) EX 408 - Strength Training & Conditioning (4) EX 408L - Strength Training & Conditioning lab (0) Ex Sci Elective (3) EX 490 Internship (3) <div style="text-align: right;">13 Credits</div>	EX 404 – Health Promotion & Disease Prevention (3) EX 407 – Nutrition & Performance (3) EX 490 – Internship (3) Ex Sci Electives (6) <div style="text-align: right;">15 Credits</div>
<ul style="list-style-type: none"> • Students should consult their advisors to ensure proper Math placement • Prerequisites Courses taken in the first 2 years/LE = 60-62 credit hours • Cumulative GPA for all LE & Prerequisite courses = 3.0 or higher • Science GPA (EX 201, BY 209, BY 210, BY 111, CY 121, CY 122 including labs) = 3.0 or higher • Admission criteria include GPAs, interview and performance evaluation in EX 2XX. • TOTAL: 122-124 Credits (120 minimum for BS degree) 		

Electives

<u>DEPT #</u>	<u>COURSE NAME</u>	<u>Credits</u>	<u>DEPT #</u>	<u>COURSE NAME</u>	<u>Credits</u>
EX 330	Prevent & Manage of Athletic Injuries	3	EX 403	Health & Exercise Across the Lifespan	3
EX 302	Coaching Principles and Practice	3	EX 405	Intro to Clinical Nutrition	3
EX 303	Fitness Program Management	3	EX 406	Motor Control in Human Performance	3
EX 401	Disability, Sport, & Physical Activity	3	PY 305	Sports Psychology	3
			BA 331	Business of Sport	3
			CD 230	Human Occupation & Lifestyle Design	3

Exercise Science Course Descriptions

Following are the course descriptions for the required courses in the Exercise Science major and the ten electives that will be offered on a rotating basis.

EX 201 Exercise Science Practicum

This course provides an introduction to concepts, theories, models, and resources related to Athletic Training and Exercise Science, by following and observing Certified and Licensed Athletic Trainers and other professionals in their normal work environments. Students should be exposed to common athletic injuries and gain insight into emerging trends and issues in Athletic Training and Sports Medicine practice and the role of health educators in various settings. This is a required sophomore-level course that is taken prior to admission into the Exercise Science program. Performance in this course is included in the admission decision for the Exercise Science program.

EX 304 Foundations of Exercise Science

This is an introductory course designed to provide students with the basic knowledge of exercise. Particular attention will be placed upon the neuromuscular adaptations to exercise and how the cardiovascular system responds to acute and chronic exercise under different environmental conditions.

PS 121 General Physics I

The first semester of a 2-semester sequence of an algebra based introductory course in physics. This first semester involves the study of the ideas, units, and calculations about velocity, acceleration, both linear and rotational, up through Kepler's Laws of planetary motion and the properties of matter. Laboratory.

PS 121L General Physics I Lab

Lab associated with PS 121.

EX 300 Kinesiology

This course covers principles of classical mechanics applied to the study of human motion to provide students with an understanding of the internal and external forces acting on the body during human movement. The role of muscle in generating force and controlling movement is emphasized. Students participate in a team project to compare the biomechanics of two motions by collecting and analyzing motion data. Students will also learn the computer skills necessary to perform a biomechanical analysis of human movement.

EX 300L Kinesiology Lab

Lab associated with EX 300

PY 202 Human Growth & Development

The principles related to psychological growth and development from birth to death.

HS 201 Clinical Medical Communications

This course provides students with an in-depth understanding of medical terminology in preparation for post-baccalaureate studies in Physician Assistant, Pharmacology, Physical Therapy, and Medical school. Focus is on techniques of medical word building, methods of categorizing major surgical, diagnostic, symptomatic, and grammatical position and direction, regions of the body, and additional combining forms related to diagnostic methods and pathology. The course is organized around specific body systems to include diagnostic and therapeutic procedures, symptomatic and pathology terms, to include pharmacology and medical record terms.

EX 301 Biomechanics

In this course the students will be introduced to the foundations of biomechanics such as kinetics and kinematics and how these relate to human movement. Emphasis will be given on the anatomical, mechanical and neurophysiological factors that influence human motion. Mathematics and Physics are required to solve some basic equations that will facilitate the understanding of human motion

PS 122 General Physics II

The second semester of a 2-semester sequence of an algebra based introductory course in physics. This second semester involves the study of the ideas and calculations about wave motion, sound, electricity, magnetism and light, with some discussion of modern physics theories. Laboratory.

PS 122L General Physics II Lab

Lab associated with PS 122.

EX 305 Physiology of Exercise

This course is designed to study the physiological effects and responses of the body and organ systems to physical activity. The course includes metabolic, neuromuscular, cardiovascular, and respiratory systems, as well as body composition.

PY 309 Abnormal Psychology

A review of the psychogenic and biological dynamics and treatments of abnormal behaviors. Emphasis on current DSM classifications.

EX 402 Fitness Assessment & Prescription

In this course students are introduced to methods and procedures to assess physical fitness and prescribe appropriate exercise programs to groups and individuals.

EX 408 Strength Training & Conditioning

This course is designed to increase the practical and theoretical understanding and knowledge of the physiological, biomechanical, and administrative aspects of designing and supervising strength and conditioning programs for diverse populations

EX 408L Strength Training & Conditioning Lab

Lab associated with EX 408.

EX 490 Internship

A required capstone experience for junior or senior exercise science majors interested in gaining experience related to their career plans. This course can be taken multiple times for 3-6 credits, with a 6 credit maximum. Experiences may involve, but are not limited to, shadowing professionals, workplace experiences, research activities in science, mathematics, or medicine, or summer experiences in discreet programs.

EX 404 Health Promotion & Disease Prevention

This course provides an introduction to concepts, theories, models, and resources related to health promotion and disease prevention, including the application of activity for improving health. Includes a focus on emerging trends and issues in health promotion and disease prevention practice and the role of health educators in various settings.

EX 407 Nutrition & Performance

This course provides a nuanced understanding of the importance of nutrition in physical activity and sport performance. Topics will include energy metabolism during exercise, fluid intake and performance, common nutritional deficiencies for athletes/exercisers, and the role of nutritional supplements in physical activity. Strategies for weight change, unique dietary concerns for the female, endurance and vegetarian athletes, the pre-game meal, and the interrelationships among nutrition, physical activity and cardiovascular health are also explored. Topics to include the common myths associated with nutritional management of the athlete.

Exercise Science Electives

EX 330 Prevention & Management of Athletic Injuries

This course provides an introduction to sports medicine with an emphasis on the profession of athletic training. Students will be introduced to the roles of various disciplines within sports medicine; athletic training as an allied health profession; National Athletic Trainers' Association (NATA) structure and governance; athletic training competencies and proficiencies.

This course will teach the students to recognize, evaluate and provide care to athletic injuries. Students will demonstrate skill in taping and wrapping techniques and construction and fitting of equipment to comply with safety regulations. Upon completion of this course, students will have a basic understanding of pharmacology and nutrition

EX 302 Coaching Principles and Practice

This course covers the fundamentals of coaching theory and practices for administering effective sports programs. The topics of sport science, team management, sports psychology, organization, teaching/learning styles, and current trends in sports will be covered to enable students to develop a sound philosophy of coaching.

EX 303 Fitness Business Management

This course is designed to discuss managing and operating health programs and fitness facilities. Topics include health promotion, program objectives, benefits, and services, as well as management principles related to planning, designing, staffing, and operating a fitness facility.

EX 401 Disability, Sport, & Physical Activity

Students explore issues related to persons with disabilities and their participation in physical activity. Topics include historical context of disability sport, risks/benefits of physical activity, legal issues of participation, inclusion vs. segregation, and attitudes towards persons with a disability. Students will interact with athletes with disabilities to better understand how individuals with disabilities participate in sport and physical activity.

EX 403 Health & Exercise Across the Lifespan

Study of the physiological role of exercise in modulating the health of humans across different phases of the lifespan. Students will learn how to screen and assess health status and fitness levels of individuals of various ages and to create recommendations for developmentally appropriate movement skills, activities, and exercise for individuals from childhood through old age.

EX 405 Intro to Clinical Nutrition

The effect of nutrients on biochemical processes is the central focus of this course. The course investigates the role and benefits of nutritional support and therapy in the metabolic and pathophysiological changes associated with both wellness and disease in humans. Emphasis is placed upon energy balance, drug-nutrient interactions, metabolic disorders, gastrointestinal, hepato-biliary, endocrine, and cardiovascular interactions both in wellness and diseases processes.

EX 406 Motor Control in Human Performance

In this course students will learn about the development of motor skills and how they relate to performance and training principles. This course is also designed to help students understand how we learn and control movements. Some elements of neurophysiology and neuroscience will be included.

BA 331 Business of Sport

This course provides insight into the key decisions made by managers on the business side of sports. It covers many aspects of the sporting landscape (e.g. production, marketing, finance, labor issues) to highlight the diverse nature of decisions involved and the financial and other issues at stake.

PY 305 Sports Psychology

This 3-credit-hour course examines how psychological factors such as motivation, emotion, and personality influence physiology, exercise, and individual and group sports participation/athletic performance. Additional topics include stress and pain management, exercise and rehabilitation adherence, burnout and overtraining, goal setting, enhancement of health and well-being, motivation and mental skills training, and sports leadership.

CD 230 Human Occupation & Lifestyle Design

This interdisciplinary course explores the power of engagement in activities (occupations) in all aspects of daily life. Through self-analysis of occupational choices, students gain an understanding of how identity, purpose and meaning are manifested through daily life activities. Students will explore occupations from the view of the four Brenau Portals: World Understanding; Scientific & Analytic Curiosity; Artistic & Creative Imagination; and Communication & Language Fluency. The course is designed for students in all majors, particularly health science and psychology. It will offer multidisciplinary perspectives on occupation and lifestyle design.