

DEPARTMENT OF EXERCISE AND SPORT SCIENCES

To prepare students to address society's growing concerns about wellness, fitness, injury prevention, and rehabilitation, the Department of Exercise and Sport Sciences (ESS) offers two exercise science majors: athletic training and exercise science. The athletic training major prepares students for a career as an athletic trainer as well as for graduate and professional schools. The exercise science major, in turn, offers four concentrations: clinical exercise and wellness, strength and conditioning, sport sciences, and medical sciences. Through concentration specific courses, fieldworks, internships, and research experiences, a B.S. in exercise science prepares graduates for careers as exercise specialists for youth, adult, geriatric, and diseased populations, including diabetes and cancer management; exercise technicians; cardiac rehabilitation specialists in hospitals and clinics; strength and conditioning coaches at high schools, colleges, universities, and private training facilities; personal trainers; corporate wellness specialists; and community fitness and education leaders. Graduates also work as business owners, communication specialists, and educators. Additionally, the major prepares students for entry into various professional programs (DC, MD, NP, OD, PA, OT, and PT) and for graduate training in biomechanics, ergonomics, exercise physiology, prosthetics, and sport psychology.

With careful planning, a qualified student may complete a Master of Science degree with a fifth year of study in the department. Questions about the five-year M.S. degree plan of study should be directed to the graduate chair, department chair, or adviser.

Majors

- Athletic Training Major – B.S. (<https://catalog.ithaca.edu/undergrad/schools/school-health-sciences-human-performance/department-exercise-sport/athletic-training-major-bs>)
- Exercise Science Major, Clinical Exercise & Wellness Concentration – B.S. (<https://catalog.ithaca.edu/undergrad/schools/school-health-sciences-human-performance/department-exercise-sport/exercise-science-major-clinical-exercise-wellness-concentration-bs>)
- Exercise Science Major, Medical Sciences Concentration – B.S. (<https://catalog.ithaca.edu/undergrad/schools/school-health-sciences-human-performance/department-exercise-sport/exercise-science-major-medical-sciences-concentration-bs>)
- Exercise Science Major, Sport Sciences Concentration – B.S. (<https://catalog.ithaca.edu/undergrad/schools/school-health-sciences-human-performance/department-exercise-sport/exercise-science-major-sport-sciences-concentration-bs>)
- Exercise Science Major, Strength & Conditioning Concentration – B.S. (<https://catalog.ithaca.edu/undergrad/schools/school-health-sciences-human-performance/department-exercise-sport/exercise-science-major-strength-conditioning-concentration-bs>)

Minors

- Exercise Science Minor (<https://catalog.ithaca.edu/undergrad/schools/school-health-sciences-human-performance/department-exercise-sport/exercise-science-minor>)

- Sport and Exercise Psychology Minor (<https://catalog.ithaca.edu/undergrad/schools/school-health-sciences-human-performance/department-exercise-sport/sport-exercise-psychology-minor>)

EXSS 12000 Anatomy and Physiology I (LA)

Develops a comprehensive understanding of the close interrelationship between anatomy and physiology as seen in the human organism. Covers the cells and tissues: epithelial, connective, muscle, and nerve. (F,Y)
Attributes: NS
4 Credits

EXSS 12100 Anatomy and Physiology II (LA)

Continuation of EXSS 12000. Covers the circulatory, endocrine, ventilatory, renal, digestive, and reproductive systems. Also reviews the muscular system from both a functional and a structural perspective. Prerequisites: EXSS 12000. (S,Y)
Attributes: NS
4 Credits

EXSS 12400 Emergency Care for the Health Professional (NLA)

This course is designed to certify students in CPR/AED for the Professional Rescuer. Emphasis will be placed upon technique and execution of required skills. Basics of emergency injury care/first aid will be covered. Time for practice of common techniques will be included so that the students may develop and apply practical skill competencies. (F-S,B,IRR)
1 Credit

EXSS 17300 Fieldwork in Exercise Science I (NLA)

Practical observational experience in private, university, professional, hospital, corporate, clinical, or a community setting where exercise is used as the primary modality to enhance physical performance. The objective is to observe closely the daily operations and special functions implemented in these settings and the practice of using exercise to improve physical capacity. Prerequisites: Application and permission of exercise science coordinator. (Sum,Y)
1 Credit

EXSS 20200 Sport and Exercise Psychology (LA)

Introduction to the psychological factors that influence individual and group sport and exercise participation. Psychological skills training (PST) techniques used to enhance sport and exercise performance are presented. Topics include exercise and rehabilitation adherence, management of eating disorders and substance abuse, burnout and overtraining, self-confidence, goal setting, anxiety and stress management, concentration and attention control, imagery and visualization, group cohesion, sport and exercise leadership, motivation, and communication. Prerequisites: Sophomore standing. (F-S,Y)
Attributes: 1, SS
3 Credits

EXSS 22000 Kinesiology (LA)

Examines the anatomical structures and mechanical aspects of human movement. Emphasis is placed on the functional anatomy of the musculoskeletal and articular systems. Pathologies of upper and lower extremities and trunk are examined for contributions to abnormal patterns of posture, movement, and locomotion. Basic neuromuscular and biomechanical principles are introduced. Laboratory exercises concentrate on the role of muscle and joint action during basic movements and the adaptations that can result from pathologic conditions. The focus is on individual joint function and the integrated function of several joints during complex activities such as normal human locomotion. Corequisites: EXSS 12100. (F-S,Y)

Attributes: NS

4 Credits

EXSS 24600 Prevention and Care of Athletic Injuries (NLA)

Introduction to basic concepts in athletic training, with emphasis on anatomical bases and mechanisms of common athletic injuries. Basics of injury prevention, recognition, and initial care are covered. Prerequisites: EXSS 12000. (F-S,Y)

3 Credits

EXSS 24800 Acute Care and Emergency Management in Athletic Training (NLA)

An introduction to acute care and emergency situations. Topics include emergency assessment, sudden cardiac death, concussion, cervical spine injury, heat illness, and other athletic related trauma and certification in CPR/AED for the Professional Rescuer. Emphasis will be placed upon technique and execution of required skills. Prerequisites: EXSS 24600. (F,Y).

3 Credits

EXSS 25000 Athletic Training Techniques I (NLA)

Lecture-laboratory course to develop and refine taping and wrapping skills along with basic emergency and therapy techniques. Prerequisites: EXSS 12000; Co-requisites: EXSS 24600; athletic training majors only. (S,Y)

1 Credit

EXSS 25100 Athletic Training Techniques II (NLA)

Lecture-laboratory course to develop and refine comprehensive orthopedic evaluation skills specific to the assessment and evaluation of athletic injuries of the lower extremity and lumbar spine. Prerequisites: EXSS 24600; EXSS 25000. Corequisites: EXSS 25600. (F,Y)

1 Credit

EXSS 25200 Athletic Training Techniques III (NLA)

Lecture-laboratory course to develop and refine comprehensive orthopedic evaluation skills specific to the assessment and evaluation of athletic injuries of the upper extremity and cervical spine. Prerequisites: EXSS 25100, EXSS 25600. Co-requisites: EXSS 25700. (S,Y)

1 Credit

EXSS 25500 Introduction to Evidence Based Medicine and Clinical Reasoning (NLA)

Introduction to the central tenets and practices of evidence based medicine and clinical reasoning. Emphasis on the effective search for, and use of research and evidence that represent best practices relating to the evaluation and treatment of injuries and conditions in active populations in order to promote favorable patient outcomes, and upon the understanding and development of sound clinical reasoning skills specific to diagnostic decision making and patient care. Prerequisites: EXSS 24600. Co-requisites: EXSS 25600. (F,Y)

1 Credit

EXSS 25600 Athletic Injury Assessment I (NLA)

In-depth analysis of complete assessment theories, procedures, principles and skills related to the evaluation of orthopedic injuries and conditions. Emphasis is placed on anatomical bases and mechanisms of athletic injuries to the lower extremities and the lumbar spine. Time for practice is included so that students may develop essential practical skills. Prerequisites: EXSS 24600; Co-Requisites: EXSS 25100. (F,Y)

3 Credits

EXSS 25700 Athletic Injury Assessment II (NLA)

In-depth analysis of complete assessment theories, procedures, principles and skills related to the evaluation of orthopedic injuries and conditions. Emphasis is placed on anatomical bases and mechanisms of athletic injuries to the upper extremities and cervical spine. Time for practice is included so that students may develop essential practical skills. Prerequisites: EXSS 25600; Co-Requisites: EXSS 25200. (S,Y)

3 Credits

EXSS 26200 Personal Training (NLA)

Develop rationale and theory for evaluation of functional capacity for the development of health-related fitness programs. Prescription of exercise for the development of health-related fitness programs using assessment data from submaximal evaluations. The class format includes lecture, demonstrations, and discussion. Leadership of all aspects of exercise programming including cardiovascular, strength, flexibility and core training will be discussed. Material is geared toward meeting learning objectives for personal training certification. Prerequisite: EXSS 12100. (F,Y)

4 Credits

EXSS 26300 Exercise Techniques (NLA)

Provides each student with both classroom and practical learning experience designed to develop the skills needed to be a competent exercise instructor - leader. The course allows students to put into practice their knowledge of exercise from their previous coursework in biomechanics, exercise physiology, and conditioning for performance and health. Students will be involved in group-centered instruction, field observation, laboratory experiences and skill execution practicals. Prerequisites: EXSS 26200. (F-S, Y)

2 Credits

EXSS 26400 Strength and Conditioning Foundations (NLA)

An examination of building blocks necessary to design, implement and test sport-specific training programs. Emphasis on determining training needs through individualized, sport-specific needs analyses and performance goal setting. Attention to all program planning variables (e.g., intensity, rest, volume, etc.). Highlights providing variety in training programs and application of training cycles with purpose of maximizing athletic performance. Develops theoretical framework for practice-based application classes that follow in the curriculum. Prerequisites: EXSS 12100. (F-S, Y)

4 Credits

EXSS 26500 Practicum in Strength and Conditioning I (NLA)

A practice-based course emphasizing assessment, prescription, and leadership of exercise programming for athletes. Develop and lead programs to enhance performance highlighting power (Olympic lifts) and cardiovascular endurance. Emphasis on technique and teaching in athletic populations. Most instruction in a full-functioning strength & conditioning facility. Material is geared toward meeting learning objectives for national certification. Prerequisites: EXSS 12100; Co-requisite: EXSS 26400. Only open to students in Strength & Conditioning concentration. (F-S,Y)

1 Credit

EXSS 27200 Practicum in Clinical Exercise and Wellness I (NLA)

A practice-based course emphasizing fitness assessment and prescription of exercise programming for healthy populations. Develop and lead clients through programs to enhance physical fitness. Emphasis on developing strength and flexibility. Learning occurs in full-functioning Wellness Clinic and laboratory settings. Material is geared toward meeting learning objectives for national certification. Prerequisites: EXSS 26200. Only open to students in Clinical Exercise & Wellness concentration. (F-S,Y)

1 Credit

EXSS 27300 Community Service in Exercise and Sport Sciences (NLA)

Volunteer work in the community. This experience emphasizes donating time to promote community well-being, using skills developed in exercise and sport sciences programs. Examples include working at health fairs, checking blood pressure, measuring body composition, and determining blood lipid profiles. Pass/fail only. Prerequisites: EXSS 26200; permission of the instructor. (F-S,Y)

1 Credit

EXSS 29400 Clinical Experience in Athletic Training I (NLA)

Supervised practical experience in an athletic training setting at Ithaca College. A minimum of 60 clock-hours is required; students apply basic clinical skills taught in previous coursework. Clinical proficiencies emphasized include basic emergency care, protective taping and wrapping, injury evaluation, and basic therapy techniques. Prerequisites: EXSS 24600, EXSS 25000. (F,Y)

0.5 Credit

EXSS 30000 Clinical Experience in Athletic Training II (NLA)

Supervised practical experience in an athletic training setting at Ithaca College. A minimum of 30 clock-hours is required; students apply basic clinical skills taught in previous coursework. Clinical proficiencies emphasized include acute and emergency care, and orthopedic assessment of the lower extremity and lumbar spine. Prerequisites: EXSS 24800, EXSS 25100, EXSS 25600. (S,Y)

0.5 Credit

EXSS 30100 Clinical Experience in Athletic Training III (NLA)

Supervised practical experience in an athletic training setting at Ithaca College or an affiliated site. A minimum of 60 clock-hours is required. Clinical proficiencies emphasized include orthopedic assessment of the upper extremity and cervical spine. Prerequisites: EXSS 25700, EXSS 25200, EXSS 30000. (F,Y)

1 Credit

EXSS 30200 Psychology of Injury in Sport and Exercise (NLA)

Designed to provide an in-depth study of the psychological causes and consequences of sport and exercise related injuries. This course will examine issues associated with onset, treatment and rehabilitation of sport injury and the mental training strategies commonly used for injury rehabilitation. Topics include motivation, adherence, return to play, mental health concerns, interview, and assessment. Prerequisites: EXSS 20200; Junior standing, (S, Y)

3 Credits

EXSS 30500 Techniques & Treatment of the Spine in Athletic Training (NLA)

Explores evaluation and treatment techniques for spinal injuries sustained in athletics. Emphasis on understanding a treatment classification system for spinal injuries and application of appropriate treatment, advanced manual therapy techniques and rehabilitation concepts. Pass/Fail only. Prerequisites: EXSS 25700. (S,Y).

2 Credits

EXSS 30600 Biomechanical Principles of Human Movement (LA)

Introduces principles of biomechanics of human movement and provides an in-depth exploration of the biomechanics of human motion focusing on the concepts and skills needed to perform and interpret biomechanical analyses of a variety of human movements. Topics will include anthropometry, kinematics, kinetics, and mechanical work, energy, and power. Select human movement skills from sport, clinical, and occupation settings will be examined in lecture. Prerequisites: EXSS 22000; PHYS 10100, PHYS 10400, or PHYS 11700 with C- or better. (F-S,Y)

Attributes: 1, NS

3 Credits

EXSS 32000 Neuromuscular Control (LA)

Study of sensorimotor and musculoskeletal systems involved in producing coordinated and purposeful movements. Injury, training, practice, learning, and other cognitive-emotional processes are examined as they affect the neuromuscular control of finely coordinated skills and vigorous physical performance. Emphasis is placed on understanding the relevant neurophysiological mechanisms of movement and how training and practice can be used to maximize performance, wellness, and rehabilitation ease. Exploration of theories of motor learning and control, from the general motor program to the dynamic system theory. Prerequisites: EXSS 22000 or PTBS 31300; junior standing. (F-S,Y)

Attributes: NS

3 Credits

EXSS 32100 Exercise Physiology (LA)

Examines physiological changes during exercise, after exercise, and during a training period. Also considers efficiency, needs, and limitations of body systems, and their interrelationships. Lecture, demonstration, and laboratory. Prerequisites: EXSS 12100; junior standing. (F-S,Y)

4 Credits

EXSS 32200 Lab Techniques: Biomechanics and Neurophysiology Assessment (NLA)

Focuses on evaluating human movement for both sports performance and functional activity assessment. Topics covered are assessment and reporting procedures, use of standard equipment in biomechanics neuromuscular control, and issues of reliability and validity. Specific procedures include assessment of athletes and patients related to sport performance and physical function via videography, forceplates, dynamometry, posturography, balance, reaction time, and skill specific tests. Emphasis is placed on communicating results to coaches, athletes, scientists, and practitioners. Attention to validity, selection, and implementation of assessment protocols in addition to interpreting and communicating results is emphasized throughout the course. Pre- or co-requisites: EXSS 32000 and EXSS 30600. (F-S,Y)

2 Credits

EXSS 34000 Therapeutic Interventions in Athletic Training I (NLA)

Contemporary therapeutic modalities used in managing athletic injuries. Modalities covered are classified as thermal agents, electrical agents, or mechanical agents. Emphasis is placed on their physiological effects, therapeutic indications and contraindications, and clinical application. Prerequisites: EXSS 25700. Co-requisites: EXSS 35100. (F,Y)

3 Credits

EXSS 34200 Therapeutic Interventions in Athletic Training II (NLA)

Basic principles of therapeutic exercise to develop, maintain, and/or improve components of physical fitness. Emphasis is placed on these principles as well as on specific exercise programs for rehabilitation of major athletic injuries. Prerequisites: EXSS 34000. Co-requisites: EXSS 35100. (S,Y)

3 Credits

EXSS 34900 Fieldwork in Exercise and Sport Sciences (NLA)

Practical experience in corporate or clinical settings, amateur and professional sport agencies, and community organizations. Focus is on observation, guided learning, and supervised practical experiences. Prerequisites: Exercise and sport sciences major or minor; junior standing or above; permission of department chair. (F-S,Y)
1-6 Credits

EXSS 35100 Athletic Training Techniques IV (NLA)

Lecture-laboratory course to develop and refine essential skills related to various therapeutic interventions with emphasis on therapeutic modalities in athletic training. Prerequisites: EXSS 25700, EXSS 25200. Corequisites: EXSS 34000. (F,Y)
1 Credit

EXSS 35200 Athletic Training Techniques V (NLA)

Lecture-laboratory course to develop and refine essential skills related to therapeutic interventions with emphasis placed in rehabilitation and exercise in athletic training. Prerequisites: EXSS 34000, EXSS 35100. Corequisites: EXSS 34200. (S,Y)
1 Credit

EXSS 36000 Medical Science (NLA)

An in-depth study of the etiology, process, treatment, and pharmacology of diseases of the human body according to the body systems. Emphasis is placed on infectious, cardiovascular, pulmonary, gastrointestinal, endocrine, and urogenital disorders. Prerequisites: EXSS 12000, EXSS 12100, junior standing. (S,Y)
3 Credits

EXSS 36400 Complementary and Alternative Therapies (LA)

Survey of complementary and nontraditional wellness and therapeutic modalities. Emphasis is placed on bodywork and mind-body interventions, including somatics, biofield therapeutics, and energy medicine. Alternative systems and philosophies of medical practice, the nature of practitioners, and dietary supplements are also covered. Scientific and nonscientific rationales for modalities are critically examined. Prerequisites: Junior standing or above; one course in human biology or physiology (BIOL 10800, BIOL 11500, BIOL 11900, BIOL 12100, BIOL 20500, or EXSS 12000); one course in psychology (PSYC xxxx). (F,O)
3 Credits

EXSS 36500 Junior Internship in Athletic Training (NLA)

Provides a supervised clinical experience opportunity for junior AT majors. Relevant clinical experiences must include exposure to upper extremity, lower extremity, and equipment intensive experiences of both genders. A minimum of 60 experiential hours per credit is required. Each student is required to take four credits of this course obtaining a minimum of 180 practical hours, and a minimum of 90 of these hours must be attained under the supervision of an approved clinical instructor. These clinical experiences must be approved by the athletic training clinical coordinator prior to registration. May be repeated up to three credits. Pass/fail only. Prerequisite: EXSS 30000, EXSS 25700; athletic training major, junior standing. (F-S, Su, Y)
1-3 Credits

EXSS 36600 Fieldwork in Athletic Training (NLA)

Provides an opportunity for athletic training majors to engage in a meaningful experience in a clinical setting related to allied health and/or medicine. Students will be exposed to non-traditional populations/ settings and/or conditions. Pass/fail only. Prerequisites: EXSS 30000; EXSS 25700; athletic training majors; junior standing. (F-S,Y)
1 Credit

EXSS 37300 Fieldwork in Exercise Science II (NLA)

Practical observational experience in private, university, professional, hospital, corporate, clinical, or a community setting where exercise is used as the primary modality to enhance physical performance. The objective is to observe closely the daily operations and special functions implemented in these settings and the practice of using exercise to improve physical capacity. A clear focus for internship planning should be developed during this fieldwork. May be repeated for one credit. Prerequisites: EXSS 26200; application to and permission of exercise science coordinator. (Sum, Y)
1 Credit

EXSS 37500 Research Methods in Exercise and Sport Sciences (LA)

Examination of the investigative methods used in exercise and sport sciences research. Design of experiments and application of statistical techniques for several types of research are explored. Includes proposal preparation for an original research project. Prerequisites: MATH 14400, MATH 14500, MATH 15500, or PSYC 20700; WRTG 10600 or ICSM equivalent; junior standing. (F-S,Y)
Attributes: 1, 2B, QL, WI
3 Credits

EXSS 38200 Practicum in Clinical Exercise and Wellness II (NLA)

A practice-based course emphasizing fitness assessment and prescription of exercise programming for healthy and patient populations. Develop and lead clients through programs to enhance physical fitness. Emphasis on developing core function, balance, and cardiovascular endurance. Majority of learning occurs in full-functioning Wellness Clinic and laboratory settings. Material is geared toward meeting learning objectives for national certification. Prerequisites: EXSS 26200. Only open to students in Clinical Exercise & Wellness concentration. (F-S,Y)
1 Credit

EXSS 38400 Practicum in Strength and Conditioning II (NLA)

A practice-based course emphasizing assessment, prescription, and leadership of exercise programming for athletes. Develop and lead programs to enhance performance highlighting strength and core function. Emphasis on technique and teaching in athletic populations. Most instruction in a full-functioning strength and conditioning facility. Material is geared toward meeting learning objectives for national certification. Prerequisites: EXSS 26400. Only open to students in Strength & Conditioning concentration. (F-S,Y)
1 Credit

EXSS 38500 Practicum in Strength and Conditioning III (NLA)

A practice-based course emphasizing assessment, prescription, and leadership of exercise programming for athletes. Develop and lead programs to enhance physical performance highlighting speed, agility, and flexibility. Emphasis on technique and teaching in athletic populations. Most instruction in a full-functioning strength and conditioning facility. Material is geared toward meeting learning objectives for national certification. Prerequisites: EXSS 26400; EXSS 26500 or EXSS 38400. Only open to students in Strength & Conditioning concentration. (F-S,Y)
1 Credit

EXSS 39900-39901 Selected Topics in Exercise and Sport Sciences (LA)

Topics of current interest to faculty and students. Experimental courses are offered under this course number and title. This course may be repeated for credit for different selected topics. Prerequisites: As appropriate to topics. (IRR)
Attributes: NLA
1-3 Credits

EXSS 40000 Clinical Experience in Athletic Training IV (NLA)

Supervised practical experience in an athletic training setting at Ithaca College or an affiliated site. A minimum of 60 clock-hours is required. Clinical proficiencies emphasized include basic therapeutic exercise techniques and advanced modality use. Students must be athletic training majors. Prerequisites: EXSS 30100, EXSS 34000, EXSS 35100. (S,Y)

1 Credit

EXSS 40100 Clinical Experience in Athletic Training V (NLA)

Supervised practical experience in an athletic training setting at Ithaca College or an affiliated site. A minimum of 60 clock-hours is required. Clinical skills emphasized include advanced therapeutic exercise techniques, therapeutic exercise protocols for major joints, and pre-event management. Prerequisites: EXSS 34200, EXSS 35200, EXSS 40000; athletic training majors only. (F,Y)

1 Credit

EXSS 40400 Leadership and Team Building in Exercise and Sport (LA)

Designed to provide an in-depth study of the principles and applied strategies that influence effective leadership and the building of productive teams. Emphasis is placed on developing high-performing teams through the effective use of individual, team, and corporate sport leadership. Topics include the assessment, training, and implementation of leadership qualities, skills, and "laws" that promote the proper development of leaders and teams. Theoretical foundations will be discussed for situational, transformational, charismatic, and servant leadership as each relates to the building of championship teams. Information is provided via small groups, lectures, role-playings, and student-taught workshop (cooperative learning) formats. Prerequisites: EXSS 30200. (S,Y)

Attributes: NS

3 Credits

EXSS 40500 Applied Techniques in Sport Psychology (NLA)

An in-depth examination of sport psychology techniques and their application to sport performance. Particular attention will be given to the synthesis and application of various mental training techniques to youth and team sport settings. Techniques include motivation, teamwork, communication, goal setting, anxiety/arousal control, imagery, positive self-talk, leadership, and mental toughness. Topics include gaining entry, confidentiality, and providing consultation in youth and team sport settings. Prerequisites: EXSS 30200, (F,Y)

3 Credits

EXSS 40600 Health and Wellness Coaching (NLA)

Presents relevant theory and allows for development of relational skills required for successful health and wellness coaching with the goal to sustainably affect healthy behavior change in patients/clients. Hybrid learning environment utilizes on-line, telephonic, and classroom experiences. Presents most course material via telephonic conferences. Details career options in health coaching and preparation for coaching certification. Prerequisites: Senior standing. Open to HSHP students only. (F,Y)

3 Credits

EXSS 40700 Clinical Pathoanatomy (NLA)

Advanced course that emphasizes musculoskeletal structure, function, and injury by extending and deepening prior knowledge through the use of human anatomic laboratory instruction. There will be in-depth examination of injuries that occur during sports participation. Students will apply knowledge of pathoanatomy, pathomechanics, and pathophysiology towards a deeper understanding of the most common sports-related injuries and their anatomical basis. Prerequisites: Grade of C or better in EXSS 34000; Grade of C or better in EXSS 34200; senior standing or permission of instructor. (F-Y)

3 Credits

EXSS 42000 Advanced Biomechanics of Human Movement (LA)

An in-depth exploration of the biomechanics of human motion, focusing on the concepts and skills needed to perform and interpret biomechanical analyses of a variety of human movements. Topics will include anthropometry, kinematics, kinetics, and mechanical work, energy, and power. Select human movement skills from sport, clinical, and occupation settings will be examined in lecture and during hands-on laboratory experiences. Prerequisites: EXSS 22000; EXSS 22100, or PHYS 10100, or PHYS 11700 with C- or better; and EXSS 32100. (S,Y)

Attributes: 1, NS

4 Credits

EXSS 42100 Advanced Study in Exercise Physiology (LA)

An extension of EXSS 32100 Exercise Physiology that goes into greater depth on the physiological mechanisms that regulate the body's responses and adaptations to exercise. Special physiological considerations of gender, development and aging, obesity, pregnancy, and environmental stress (e.g., altitude, pollution, extreme temperature) are emphasized. Popular pharmaceutical and dietary manipulations used to enhance exercise performance are discussed. Experimental research in exercise physiology is introduced, and limited laboratory experiences are scheduled during class time. Prerequisites: EXSS 32100. (F-S,Y)

3 Credits

EXSS 42200 Exercise and Rehabilitation Psychology (LA)

Discussion of the psychological antecedents of exercise, including barriers and adherence to exercise or rehabilitation regimens. Particular attention will also be given to wellness, stress, the biobehavioral basis of coronary heart disease and other illnesses, and the psychodynamics of rehabilitative medicine. Prerequisites: EXSS 20200; EXSS 32100 or EXSS 34200 or EXSS 30200; Junior standing. (F, Y)

Attributes: 1, SS

3 Credits

EXSS 43000 Seminar in Athletic Training (NLA)

Seminar for senior students majoring in athletic training, intended to expand and reinforce learning that has taken place in previous core courses. Major topics include contemporary issues, athletic training administration, budget management, facility design, protective equipment, injury evaluation, modality operation, and treatment and rehabilitation programs. Prerequisites: EXSS 25600; senior standing in athletic training/exercise science. (F-S,Y)

3 Credits

EXSS 43100 Medical Aspects of Athletics (NLA)

A course to familiarize athletic training/exercise science majors with medical illnesses and nonorthopedic problems that affect athletes. Prerequisites: Senior standing in athletic training/exercise science. (S,Y)

1 Credit

EXSS 43200 Orthopedic Perspectives on the Shoulder and the Knee (NLA)

The orthopedic examination of the shoulder and knee, including the orthopedic decision-making process for shoulder and knee disorders. Various procedures and the rationale for rehabilitation protocols are addressed. Provides hands-on experience in laboratory sessions. Pass/fail only. Prerequisites: Senior standing in athletic training/exercise science. (S,Y)
1 Credit

EXSS 43600 Sport and Exercise Counseling (LA)

An introduction to the sport counseling process and to the various performance issues related to counseling student-athletes. Students will develop a strong base of knowledge related to the counseling process and will have multiple opportunities to practice counseling skills in role-playing and small group formats. Topics include the need for counseling, stereotypes and biases, the counseling process, attending and listening, empathy, helping athletes tell their stories, brief counseling, and various topics and concerns that arise when counseling student-athletes from different populations. The course will be taught via lecture, large- and small-group discussions, role-playing, and modeling. Prerequisites: EXSS 30200, senior standing. (S,Y)
3 Credits

EXSS 44700 Pathophysiology, Limited Capacity and Exercise (NLA)

Study of the pathophysiology of disease or disabling states, the assessment of exercise potential, and the special considerations for prescription of exercise in these cases. Special emphasis is placed on discussion of phase I and phase II cardiac rehabilitation, diabetic patients, pulmonary disease, and working with older adults with limited functional capacity. Additional special populations are discussed as time permits. Material is geared to the learning objectives of the American College of Sports Medicine's exercise specialist certification. Prerequisites: EXSS 24600; EXSS 26200; EXSS 32100. (S,Y)
3 Credits

EXSS 45000-45100 Independent Study in Exercise and Sport Sciences (LA)

Individual study program for the investigation of special issues or topics in the field of exercise or sport science that have such breadth of cultural or psychological material, such rigor and depth of theoretic structure, or such play of broad intellectual and aesthetic themes as to be classified as liberal arts. Arranged individually between student and faculty sponsor according to guidelines available from the department. Prerequisites: Major or minor in the Department of Exercise and Sport Sciences; permission of department chair. (F-S,Y)
0.5-3 Credits

EXSS 45500 Senior Internship in Athletic Training (NLA)

Provides a supervised clinical experience opportunity for senior AT majors. Relevant clinical experiences must include exposure to upper extremity, lower extremity, and equipment intensive, and general medical experiences of both genders. A minimum of 60 experiential hours per credit is required. Each student is required to take four credits of this course obtaining a minimum of 240 practical hours, and a minimum of 120 of these hours must be attained under the supervision of an approved clinical instructor. These clinical experiences must be approved by the athletic training clinical coordinator prior to registration. May be repeated up to four credits. Pass/fail only. Prerequisite: EXSS 36500, senior standing. (F-S, Su, Y)
1-4 Credits

EXSS 45600 Clinical Experience in Athletic Training VI (NLA)

Supervised practical experience in an athletic training setting at Ithaca College or an affiliated site. A minimum of 60 clock-hours is required, and clinical proficiencies emphasized include administrative aspects of athletic training, presentation of season-ending injury reports as well as case histories. Clinical integration proficiencies (CIP) will be assessed. This course will include the ICC Capstone and will include athletic training major content with the integrative core curriculum and self-reflection of learning outcomes also explored. Students must be athletic training majors. Prerequisites: EXSS 40100, EXSS 43000. (S,Y)
Attributes: CP
1 Credit

EXSS 46000 Internship in Exercise and Sport Sciences (NLA)

Supervised work experience in corporate or clinical exercise settings, amateur and professional sport agencies, and community sport organizations. Student assumes a leadership role in various job-related activities and performs administrative tasks in support of such activities under an experienced agency supervisor and faculty sponsor. Prerequisites: EXSS 34900; permission of department chair. 6-(F-S,Y)
6-12 Credits

EXSS 46400 Cardiopulmonary Assessment for Exercise (NLA)

Addresses techniques for assessment of cardiovascular and pulmonary disease. Emphasis is placed on developing skill in electrocardiography, graded exercise testing, and the assessment of maximal functional capacity. Utilizes assessments in the development of appropriate exercise prescriptions. Material is geared to meet learning objectives of outside certifying agencies. Prerequisites: EXSS 26200; EXSS 32100. (S,Y)
3 Credits

EXSS 46600 Administration, Mentoring, and Professional Preparation (NLA)

Provides opportunities to develop administrative and leadership skills. Emphasis is on appreciation for excellent leadership, staffing, equipping, and operations of a fully-functioning human performance facility. Majority of learning occurs by leading and working with apprentice students (i.e., underclass) in the program and through the completion of a project that allows the student to design their own facility. Preparation for external certification is emphasized. Prerequisites: EXSS 38200, EXSS 38400, EXSS 38500; and senior standing. (F-S,Y)
3 Credits

EXSS 46700 Practicum in Clinical Exercise and Wellness III (NLA)

A practice-based course emphasizing assessment of cardiovascular capacity and heart health through practical experiences in graded exercise testing. Highlights understanding electrocardiography, test protocol, utilizing results to guide exercise programming, and safety. Students initially collect data on classmates and ultimately work with Clinic clients. Majority of learning occurs in full-functioning Wellness Clinic and laboratory settings. Material is geared toward meeting learning objectives for national certification. Prerequisites: EXSS 46400; EXSS 27200 or EXSS 38200. Only open to students in Clinical Exercise & Wellness concentration. (F-S,Y)
1 Credit

EXSS 47300 Internship: Strength and Conditioning (NLA)

A practical learning experience in a setting using exercise for athletic performance enhancement. Sites for internships include strength and conditioning programs in private, university and professional settings. Students are involved with the daily operations of the agency. Prerequisites: EXSS 46600; a minimum GPA of 2.50 in specific major requirements; permission of the exercise science coordinator. 6- (F-S,Y)
Attributes: CP
6-12 Credits

EXSS 47400 Internship: Clinical Exercise and Wellness (NLA)

A practical learning experience in a setting using exercise for rehabilitation purposes, disease prevention, or wellness promotion. Sites such as hospitals, clinics, corporate fitness centers, wellness clinics, and community-based facilities are typical. Students are involved with the daily operations of the agency. Prerequisites: EXSS 46600; a minimum cumulative GPA of 2.75 with a minimum GPA of 3.00 in specific major requirements; permission of the exercise science coordinator. 6- (F-S,Y)
Attributes: CP
6-12 Credits

EXSS 47500 Research Team I: Exercise and Sport Sciences (LA)

First semester of capstone research experience involving synthesis of a research question, development of appropriate experimental design, as well as data collection, analyses, interpretation, and result dissemination by teams of students under the direction of one or more faculty members. Prerequisites: EXSS 37500. (F,Y)
Attributes: UND
3 Credits

EXSS 47600 ICC Capstone in EXSS (NLA)

This course will provide exploration and self-reflection upon the relationship between the Ithaca College core curriculum courses and its application to the field of Exercise Science. Emphasis on the creation of a reflective artifact that demonstrates the changes that have occurred as a result of the ICC experience inside and outside the study of exercise science. Prerequisites: Senior standing, permission of instructor. (S,Y)
Attributes: CP
0 Credit

EXSS 47700 Research Team II (LA)

Second semester of capstone research experience involving data collection, analysis, interpretation, and result dissemination by teams of students under the direction of one or more faculty members. Prerequisite: EXSS 47500; (S,Y)
Attributes: CP
3 Credits