

# EXERCISE AND SPORT SCIENCES (EXSS)

## 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. 1.0 credit. (F-S,B,IRR)

1 Credit

## EXSS 12500 Foundations of Human Performance and Wellness (NLA)

This course provides students with an introduction to areas of exercise science focused on enhancing human performance and wellness. Details of some applied fields within Exercise Science (e.g. clinical exercise physiology, health & wellness, strength & conditioning) and how they impact human performance are emphasized. The range of human performances, from sports to prevention of disease and rehabilitation are discussed. Students will gain insight into career opportunities within exercise science aimed at enhancing human performance & wellness. Lecture and practical learning experiences will introduce students to skills needed to be a competent exercise instructor and leader. (F,Y)

2 Credits

## EXSS 12600 Origins and Literacy of Medical Science (NLA)

Understand how science, research, and healthcare are interrelated, and how humans incorporate a systematic process to explain and predict clinical phenomena. Explore how we have come to rely on science in clinical practice, identify common potential misconceptions, and deepen the understanding of the scientific words we use. (S)

2 Credits

## EXSS 13000 Pre-Athletic Training Practicum 1 (NLA)

Introduces elements of health care, the athletic training profession, and clinical practice. Presents basic skills, such as taping, wrapping, joint and muscle assessment, application of simple therapeutic techniques, safety, and clinic organization. Part 1 of a 6-course Pre-Athletic Training Practicum series. (F,Y)

1 Credit

## EXSS 13500 Pre-Athletic Training Practicum 2 (NLA)

Reinforces elements of health care, the athletic training profession, and clinical practice. Introduces the specific health care structure of athletic training at Ithaca College. Presents basic skills for applying various physical agents. Part 2 of a 6-course Pre-Athletic Training Practicum series. Prerequisites: EXSS 13000. (S,Y)

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. 1 credit. (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: Any 100-level course. (F,S,Y)

Attributes: 1, SS

3 Credits

## EXSS 21000 Pre-Athletic Training Practicum 3 (NLA)

Reinforces elements of health care, the athletic training profession, and clinical practice. Expands on skills learned in courses from the Exercise Science curriculum (Anatomy & Physiology I, Anatomy & Physiology II, Kinesiology), including palpation, goniometry, manual muscle testing, and neuromuscular screen. Part 3 of a 6-course Pre-Athletic Training Practicum series. Prerequisites: EXSS 13500. (F,Y)

1 Credit

## EXSS 21500 Pre-Athletic Training Practicum 4 (NLA)

Reinforces elements of health care, the athletic training profession, and clinical practice. Expands on skills learned in courses from the Exercise Science curriculum (Anatomy & Physiology I, Anatomy & Physiology II, Foundations of Human Performance and Wellness, Kinesiology), including stretching and strengthening exercises. Introduces assisted ambulatory and general medical assessment skills. Part 4 of a 6-course Pre-Athletic Training Practicum series. Prerequisites: EXSS 21000. (S,Y)

1 Credit

## 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. Prerequisites: EXSS 12000, EXSS 12100 (can be taken concurrently). (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. (S,Y)

3 Credits

**EXSS 26200 Personal Training (NLA)**

Develop rationale and theory for the development of health-related fitness programs for the adult fitness participant. Understand how to conduct preparticipation health screening through client consultation. Learn how to develop exercise programs from a client's needs analysis. Understand the necessary skills required of the personal trainer and how to develop good client rapport and effective exercise leadership. Develop an understanding of programming for unique populations (i.e. – older adult, obese, etc.). The class format includes lecture and discussion. Material is geared toward meeting learning objectives for personal training certification. Prerequisite: EXSS 12100. (F,Y)

3 Credits

**EXSS 26400 Strength and Conditioning Foundations (NLA)**

This course examines the building blocks necessary to design, implement, and test a sport specific training program. Assessment tools will be examined and how their results are used to develop training programs for the athlete will be discussed. Determination of training needs through individualized, sport specific needs analyses and performance goal setting is emphasized. Short and long term benefits of training programs and the application of training cycles are discussed. The course develops the theoretical framework for the practice-based application classes that follow. The course helps prepare the student for a national certification exam. Prerequisites: EXSS 12100, EXSS 12500. (F)

3 Credits

**EXSS 26500 Practicum in Health-Related Assessment (NLA)**

Develop skills in administering health screening, assessments for cardiovascular endurance, muscular fitness, flexibility, body composition, and functional fitness. Majority of learning is fostered through review of video lectures, supervised practice, and arranged experiences in a full-functioning Wellness Clinic. Material is geared toward meeting learning objectives for national certification. Prerequisites: EXSS 12100, EXSS 12500. (F,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. 1 credit. (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 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. (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)**

Biomechanics of human movement provides an in-depth exploration of the biomechanics of human motion. Concepts and skills used to perform and interpret biomechanical analyses of human movement including anthropometry, kinematic analysis, and joint kinetics are covered. Biomechanics of fundamental movement skills including running, jumping/landing and lifting are examined in lecture and during hands on laboratory experiences. Prerequisites: PHYS 10100 or PHYS 11700, and EXSS 22000. (F,S,Y)

Attributes: 1, NS

4 Credits

**EXSS 31100 Biopsychosocial Foundations of Clinical Practice (LA)**

Describes human health and illness from a personal context. Explains biological, psychological, and social factors and their complex interactions in order to formulate more effective approaches to health, illness, and health care delivery. Applies the biopsychosocial model to healthcare studies and clinical practice. Prerequisites: PSYC 10300; EXSS 24600. (F,Y)

Attributes: DV

3 Credits

**EXSS 31200 Pre-Athletic Training Practicum 5 (NLA)**

Reinforces elements of health care, the athletic training profession, and clinical practice. Introduces procedures for medical coverage at practices, competitions, and in the event of emergency response. Prepares students for cardiopulmonary resuscitation (CPR) and automated external defibrillator (AED) certification. Discusses specific considerations for various collegiate sports. EXSS 31200: Pre-Athletic Training Practicum 5 will be the 5th of the 6-course Pre-Athletic Training Practicum series. Prerequisites: EXSS 21500. (F,Y)

1 Credit

**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. (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 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 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. 1 credit. (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, 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. 1 credit. (F-S,Y)  
1 Credit

**EXSS 38400 Practicum in Athletic Testing (NLA)**

Develop skills to conduct sports specific needs analyses. Students' abilities to implement testing protocols to evaluate athlete / client condition on health- and skill-related components of fitness is enhanced. Statistical analysis is used to identify strengths and weaknesses. Profiles are devised to identify objective program directions. Material is geared toward meeting learning objectives for national certification. Prerequisites: EXSS 26200 and EXSS 26400. (F,Y)  
1 Credit

**EXSS 38500 Practicum in Resistance Exercise and Olympic Weightlifting (NLA)**

Explore and execute training modes to enhance strength and power in active populations. Emphasis is on technique and teaching for development of performance in a variety of active populations. Discussion and demonstration, personal skill development, and leading peers in skill development are the primary means of instruction. Material is geared toward meeting learning objectives for national certification. Prerequisites: EXSS 26200 and EXSS 26400. (S,Y)  
1 Credit

**EXSS 38600 Practicum in Field-Based Conditioning (NLA)**

Develop skills in the proper execution of exercises to enhance health- and skill-related components of fitness (i.e. flexibility, speed, agility, power and aerobic / anaerobic endurance). Students' abilities to devise and implement field-based conditioning modes will be enhanced. Emphasis is on technique and teaching for development of athletic performance in a variety of athletic populations. Discussion, demonstration, personal skill development, and leading athletes / clients in skill development are the primary means of instruction. Material is geared toward meeting learning objectives for national certification. Prerequisite: EXSS 26200 and EXSS 26400. (S,Y)  
1 Credit

**EXSS 38700 Practicum in Performance and Wellness Testing (NLA)**

Emphasizes skill development in graded exercise testing through practice-based instruction. Assessing the health status of an individual, protocol selection, and utilizing results to guide exercise programming will be discussed. Understanding electrocardiography and safety and emergency procedures will be highlighted. Majority of learning is fostered through arranged experiences in a full-functioning Wellness Clinic and Exercise Physiology Laboratory. Material is geared toward meeting learning objectives for national certification. Prerequisites: EXSS 26200; EXSS 26400; EXSS 32100. (S,Y)  
1 Credit

**EXSS 39000 Advanced Strength and Conditioning (NLA)**

This enhances students understanding of strength and conditioning service provision through examination of more advanced concepts of performance testing, program design and program implementation. Technological advancements and recent developments in the areas of performance testing and athlete monitoring will be examined. Objective determination of athletes' needs will be emphasized further. Student understanding of program design will be enhanced through discussion and application of advanced periodization models. The course helps prepare the student for the national certification exam. Prerequisites: EXSS 26400. (S,Y)  
3 Credits

**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. (S,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. 3 credits. (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. 3 credits. (F-Y)  
3 Credits

**EXSS 41100 Evidence-Based Practice (NLA)**

Introduces evidence-based practice and clinical research, including epidemiologic, etiologic, diagnostic, prognostic, and therapeutic study designs. Discusses the clinical scientific method and the systematic process of moving from observation to intervention in clinical research. Emphasizes the critical appraisal of research, including identifying potential sources of bias, making a professional judgment of the seriousness of the risk of bias, and interpreting clinical research metrics to guide decision-making and best practices for patients. Prerequisites: EXSS 37500. (S,Y)  
3 Credits

**EXSS 41200 Pre-Athletic Training Practicum 6 (NLA)**

Reinforces elements of health care, the athletic training profession, and clinical practice. Discusses various professional and regulatory elements of athletic training including, the domains of practice, interprofessional practice, professional education, and governance. Prepares students for entry into the Athletic Training Program. Part 6 of a 6-course Pre-Athletic Training Practicum series. Prerequisites: EXSS 31200. (S,Y)  
1 Credit

**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 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. 6-12 credits. (F-S,Y)  
6-12 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. 3 credits. (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. 1 credit. (F-S,Y)  
1 Credit

**EXSS 47000 Applied Practice in Strength and Conditioning and Wellness (NLA)**

Enhance understanding of service provision in strength and conditioning for performance and wellness through applied practice. Students will assist strength and conditioning and health and wellness professionals in the delivery of support services to athletes / clients. Areas of support may include performance testing, program design, exercise leadership, reflective practice and athlete, client and coach education. The objective is to observe closely and have some supervised experiences in the daily operations and special functions of strength and conditioning / health and fitness facilities. A clear focus for internship planning will be developed during this experience. Prerequisites: EXSS 38600; EXSS 38700; EXSS 39000. (F,Y)  
2 Credits

**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. (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. (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. 3 credits. (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; 3 credits. (S,Y)

Attributes: CP

3 Credits