
Kinesiology

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Instructors

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Admission

In addition to The Graduate School qualifications for admissions, potential candidates must meet the requirements of the Department of Kinesiology. Contact the department for more information.

Mission

The Department of Kinesiology is dedicated to the development of future leaders in professions that maximize the potential of individuals and society through exercise, sport and leisure activities. Concentrations in the department include exercise science and sport and recreation leadership.

Program goals are to help students:

- Identify and describe important issues relevant to exercise science, sport, recreation and physical education.
- Educate others about the relevance of exercise, sport and leisure to individuals and to society.
- Develop and administrate safe, effective and scientifically based physical activity, sport and leisure programs that address individual, community and societal needs.
- Enable students to evaluate the quality of information germane to the disciplines of physical activity, sport and leisure.
- Develop the skills needed to conduct quality research.
- Conceive a cognate area of study within the professional field in which they intend to work.

The Department of Kinesiology offers a Master of Science degree with concentrations in exercise science and sport and recreation leadership. Nutrition and physical activity is a thesis-only track; other tracks offer either thesis or non-thesis options. The department also offers a five-year program leading to a Master of Arts in Teaching (M.A.T.) designed for initial licensure to teach physical and health education.

In all programs, courses must be selected with the approval of the adviser in accordance with the professional goals of the student. Students applying to kinesiology are expected to have satisfactory Graduate Record Examination scores and adequate undergraduate preparation including at least one course in a cognate area of the discipline.

Some undergraduate courses may be taken concurrently with graduate work.

Master of Science Concentration in Exercise Science *Clinical Exercise Physiology Track*

This 36-credit hour program leads to a Master of Science degree with a clinical exercise physiology track. The program is designed to prepare students to work with clients with a variety of pathological or clinical disorders. Clients may include those with cardiovascular, pulmonary, metabolic, immunological, inflammatory, orthopedic, and neuromuscular disorders. Other clients may include persons from geriatric, pediatric or obstetric populations. Graduates of this program will be prepared to work in hospital-based and community wellness programs, as well as other clinical settings. Program goals were developed in conjunction with the knowledge, skills and abilities identified by the American College of Sports Medicine (ACSM) as essential for preparation as a Registered Clinical Exercise Physiologist.

Clinical Exercise Physiology Requirements

Minimum Requirements	Credit Hours
KIN 540. Clinical Exercise Physiology I	3
KIN 640. Clinical Exercise Physiology II	3
KIN 542. Exercise Programs for Special Populations	3
KIN 644. Metabolic and Cardiorespiratory Aspects of Exercise	3
KIN 645. Muscular, Hormonal and Environmental Aspects of Exercise	3
KIN 655. Research Techniques	3
KIN 681. Internship in Exercise Science	6-9
Electives (Selected under advisement)	9-12
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Example Electives

KIN/NUTR 555. Theories and Practices of Weight Management	3
KIN 650. Exercise Testing and Prescription	3
KIN 670. Program Development for Wellness Centers	3
KIN 697. Directed Research in Kinesiology	3
KIN 700. Thesis	6
HTH 552. Strategies for Health Change	3
NUTR 545. Nutrition and Exercise	3
HUTR 582. Nutrition and Metabolism	3
NUTR 655. Integrated Nutrition	3
PYSC 515. Basic Counseling Skills	3
SCOM 680. Special Topics in Health Communication	3

Exercise Physiology Track

This 33-credit hour exercise science program leads to a Master of Science degree with track in the area of exercise physiology. Students in this program receive background preparation necessary for doctoral work in exercise physiology as well as expertise in physiological testing, exercise prescription and research. Graduates of this program have been successful in pursuing advanced degrees in exercise physiology and/or have been placed as exercise physiologists in the fitness/wellness industry including cardiac rehabilitation settings. Program goals were developed in conjunction with the knowledge, skills and abilities identified by the American College of Sports Medicine as essential for successful professional preparation. All students are required to do directed research; however, students may select either a thesis or non-thesis option.

Exercise Physiology Requirements

Minimum Requirements	Credit Hours
KIN 542. Exercise Programs for Special Populations	3
KIN 547. Principles and Strategies of Athletic Development	3
KIN 644. Metabolic and Cardiorespiratory Aspects of Exercise	3
KIN 645. Muscular, Hormonal and Environmental Aspects of Exercise	3
KIN 650. Exercise Testing, Evaluation and Prescription	3
KIN 655. Research Techniques	3
MATH 522. Statistics for Research	3
Choose one of the following:	3-6
KIN 697. Directed Research in Kinesiology	
KIN 700. Thesis	
Approved electives	6-9
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Nutrition and Physical Activity Track

This interdisciplinary program has been planned for persons with an undergraduate degree in kinesiology, dietetics, including registered dietitians, or an approved area, and is designed for individuals interested in nutrition in exercise performance settings. Courses in nutrition, exercise physiology, human anatomy and physiology are prerequisites for admission. Students enrolled in this 33-credit hour program must declare a major in either health sciences/dietetics or kinesiology with a track in nutrition and physical activity, and will be assigned an adviser in both departments.

A thesis or directed research on a selected topic in nutrition and exercise is required. Although this program does not lead to the RD status by the American Dietetic Association, students may obtain this status by completing additional requirements. A listing of these requirements is available from the undergraduate coordinator of the dietetics program (also see Dietetics).

Nutrition and Physical Activity Requirements

Minimum Requirements	Credit Hours
KIN/NUTR 555. Theories and Practices of Weight Management	3
KIN 644. Metabolic and Cardiorespiratory Aspects of Exercise	3
KIN 645. Muscular, Hormonal and Environmental Aspects of Exercise	3
KIN 650. Exercise Testing, Prescription and Evaluation	3
KIN/HTH 655. Research Techniques	3
MATH 522. Statistics	3
NUTR 545. Nutrition and Exercise	3
NUTR 652. Nutrition Assessment	3
Choose one of the following:	3
NUTR 582. Nutrition and Metabolism	
NUTR 655. Integrated Nutrition	
Choose one of the following:	6
KIN/HTH 700. Thesis	
NUTR 681, 682, 695. Directed Research in Dietetics I-II and Seminar and Research in Dietetics	

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Master of Science Concentration in Sport and Recreation Leadership

Sport Leadership Track

The 33-credit hour Sport Leadership track is designed for students who wish to pursue a career in athletic administration or sport leadership in private, public, or non-profit agencies. Students who complete the Sport Leadership requirements are prepared to work at all levels of sport leadership including athletic administration. Graduates of this Sport Leadership track may find employment in positions in areas such as high school and college coaches, athletic directors, professional and amateur sport associations, public, private, and non-profit agency administrators and youth sports programs. An internship is required in this program.

Sport Leadership Requirements

Minimum Requirements	Credit Hours
KIN 570. Administration in Sport & Recreation Leadership	3
KIN 572. Facilities in Sport and Recreation Leadership	3
KIN 625. Social Issues in Sport and Recreation Leadership	3
KIN 631. Philosophy of Sport and Recreation Leadership	3
KIN 655. Research Techniques	3
KIN 675. Legal Aspects of Sport and Recreation Leadership	3
KIN 678. Theories and Issues of Coaching	3
KIN 685. Internship in Sport and Recreation Leadership	3-6
Approved electives or KIN 700 (Thesis)	6-9

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Recreation Leadership Track

The 33-credit hour Recreation Leadership track is designed for students who wish to pursue a career in Recreation management or leadership in private, public, or non-profit agencies. Students who complete the Recreation Leadership requirements are prepared to work at all levels of recreation leadership. Graduates of this Recreation Leadership track may find employment in positions in areas such as public, private, and non-profit agencies, commercial recreation, professional and amateur sport associations, theme parks, hospitality management, facility management, and youth sports programs. An internship is required in this program.

Recreation Leadership Requirements

Minimum Requirements	Credit Hours
KIN 570. Administration in Sport and Recreation Leadership	3
KIN 572. Facilities in Sport and Recreation Leadership	3
KIN 625. Social Issues in Sport and Recreation Leadership	3
KIN 631. Philosophy of Sport and Recreation Leadership	3
KIN 655. Research Techniques	3
KIN 673. Fiscal Management of Sport and Recreation Leadership	3
KIN 675. Legal Aspects of Sport and Recreation Leadership	3
KIN 685. Internship in Sport & Recreation Leadership	3-6
Choose one of the following:	
Approved electives	6-9
KIN 700. Thesis (6 credits) and one approved elective (3 credits)	<u>3</u>
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Campus Recreation Leadership Track

The 33-credit hour campus recreation leadership track is designed for students who wish to pursue a career in campus recreation. Students who complete the campus recreation leadership requirements are prepared to work at all levels of campus recreation as well as national governing bodies such as NIRSA, event management, programming, and facility management. An internship is required in this program.

Campus Recreation Leadership Requirements

Minimum Requirements	Credit Hours
KIN 572. Facilities in Sport & Recreation Leadership	3
KIN 580. Human Resource Management and Development in Campus Recreation	3
KIN 581. Leadership in Recreation Professions	3
KIN 582. Programming and Operations in Campus Recreation	3
KIN 655. Research Techniques	3
KIN 673. Fiscal Management of Sport & Recreation Leadership	3
KIN 675. Legal Aspects of Sport & Recreation Leadership	3
KIN 685. Internship in Sport & Recreation Leadership	3
PSYC 646. The American College Student	3
Choose one of the following:	6
Six hours of approved electives	
KIN 700. Thesis (6 credits)	<u>3</u>
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Master of Arts in Teaching

The Master of Arts in Teaching leads to an initial Virginia licensure to teach physical and health education PK-12. As a continuation of the undergraduate physical and health education teacher education (PHETE) program, this program is only open to JMU graduates who have a bachelor of science degree in kinesiology with a concentration in PHETE. A listing of the undergraduate courses may be found in the current JMU Undergraduate Catalog.

To be fully admitted to the fifth-year M.A.T. program, students must have completed the following requirements.

- Satisfy all requirements for admission to the teacher education program.
- Satisfy all requirements for admission to The Graduate School.
- Successful completion of alternative criteria to the GRE, including:
 - Possess a GPA of 3.0 or better in the last four semesters of undergraduate course work.
 - Display certain personal qualities and dispositions of a professional educator as determined by program faculty.
 - Demonstrate appropriate professional development reflective of a quality teacher candidate as assessed by program faculty.
 - Demonstrate competence in classroom management and a satisfactory level of teaching ability through video analysis and practicum experience.
 - Demonstrate quality planning, effective teaching skills, and a demonstration of student learning through a reflective teaching project.

Fifth-Year M.A.T. Program Requirements

Minimum Requirements	Credit Hours
KIN 511. Technology in Health and Physical Education	3
KIN 512. Instructional Methods in Middle and Secondary Physical Education	3
KIN 513. Professional Issues for Prospective Physical and Health Educators	3
KIN 514. Methods in School Health for PHETE	3
KIN 610. Curriculum Design and Development in Health and Physical Education	3
KIN 611. Teaching Diverse Populations in Health and Physical Education	3
KIN 612. Analysis of Teaching and Learning	3
KIN 683. Secondary Internship in Health and Physical Education	6
Choose one of the following:	3
KIN 655. Research Techniques	
HTH 655. Research Techniques	
EDUC 630. Inquiry in Education	
Approved elective	<u>3</u>
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Minor in Kinesiology

A student working toward the Master of Education degree may minor in kinesiology. A minimum of 12 credit hours in kinesiology is required. All courses must be approved by the minor adviser.

Course Offerings

Kinesiology

KIN 501. Workshop in Kinesiology. 1-3 credits.

An intensive study of one aspect of kinesiology that is of current concern to physical educators in the field.

KIN 506. Applied Biomechanics. 3 credits.

A study of biomechanical concepts and applications as they relate to sport and physical activity. Specific attention will be given to the application of biomechanical concepts and principles in the analysis of movement skills. *Prerequisites: KIN 306 or permission of instructor.*

KIN 510. Principles of Motor Learning. 3 credits.

Principles and theories of learning motor skills and their applications in teaching and coaching physical education activities.

KIN 511. Technology in Health and Physical Education. 3 credits.

Addresses technological issues related to education and explores a variety of educational technologies available to enhance the instruction of physical and health education. An action plan for the utilization of educational technologies will be developed.

KIN 512. Instructional Methods in Middle and Secondary Physical Education. 3 credits.

A detailed study that builds upon the undergraduate instructional methods in physical education with developmentally appropriate teaching and management techniques for middle and secondary physical education. An in-depth review of the theoretical framework of the teaching styles and application of such in a practical setting are vital components.

KIN 513. Professional Issues for Prospective Physical and Health Educators. 3 credits.

An in-depth examination of current issues and research on teaching and teachers in physical and health education

KIN 514. Methods in School Health for PHETE. 3 credits.

An overview and application of methods for teaching health in the schools grades 6-12. Teacher candidates will develop skills in planning, instructional methods, classroom management and reflective teaching. To provide for the application of theory a teaching practicum is incorporated within the course.

KIN 540. Clinical Exercise Physiology I. 3 credits.

A study of the benefits, risks and strategies for exercise testing and programming for persons with cardiovascular and metabolic disorders. Prevalence, economic ramifications, pathophysiology, clinical manifestations, assessment, pharmacology, potential benefits and risk of exercise, strategies for exercise programming, and other relevant topics are emphasized.

KIN 542. Exercise Programming for Special Populations. 3 credits.

This course will include an in-depth study of the recommended procedures for exercise testing and prescription for non-diseased special populations, children and youth, elderly, women and pregnant women.

KIN 547. Principles and Strategies of Athletic Development. 3 credits.

A study of the physiological aspects of strength and flexibility development. Topics include muscle fiber and connective tissue characteristics, neural control, and training adaptations related to both general fitness and sport-specific training programs. *Prerequisite: an undergraduate course in exercise physiology or permission of the instructor.*

KIN 555. Theories and Practices of Weight Management. 3 credits.

An examination of the physiological, psychological and environmental theories of obesity. Current trends in obesity research are emphasized. Case studies and laboratories are utilized to provide students with practical experience in constructing a weight loss program.

KIN 570. Administration in Sport and Recreation Leadership. 3 credits.

Specific problems and new developments in the administration of sport and exercise programs, including business procedures, equipment, facilities, conduct of athletic events, school law and liability, staff and public relations.

KIN 572. Facilities in Sport and Recreation Leadership. 3 credits.

The planning, construction, maintenance and utilization of sport, exercise and recreation facilities.

KIN 575. Gender Issues in Sport and Recreation Leadership. 3 credits.

A study of the institutional, political and societal perpetuation of gender identity and its relationship to sport participation.

KIN 580. Human Resource Management and Development in Campus Recreation. 3 credits.

An overview of human resource management and human resource development in campus recreation programs. The course will provide an introduction to administrative practices, organizational development and management theory and apply these concepts into the day to day practices and skills required of an administrator of a campus recreation program. Skill development will include areas such as hiring, developing position descriptions, evaluation, training, career development, and supervision of student and professional staff members.

KIN 581. Leadership in Recreation Professions. 3 credits.

This course will introduce students to the concept of leadership, explore leadership theory, provide opportunities to develop leadership skills, relate leadership to ethics and values, and assist students in applying good leadership practice into their current and future roles and responsibilities.

KIN 582. Programming and Operations in Campus Recreation. 3 credits.

An in-depth analysis of programming and operations in a campus recreation center. Skill development in outcome-based program development and assessment; use of wellness models, health behavior theory, and student development theory in planning; and marketing and programming for diverse populations and skill levels. The course will also cover operational issues such as reservations, space prioritization, equipment and facility maintenance issues, and revenue generation.

KIN 610. Curriculum Design and Development in Health and Physical Education. 3 credits.

An advanced study that builds upon the undergraduate elementary curriculum course by focusing on the middle and secondary student, curriculum models, and the development of effective and futuristic physical education units and programs that meet the needs of the populations.

KIN 611. Teaching Diverse Populations in Health and Physical Education. 3 credits.

The diversity of student populations in schools relates to differences in ability, socioeconomic status, cultural background, race, religious beliefs, sexual orientation and gender. This is an in-depth study of appropriate teaching methods that celebrate diversity and inclusion. Experiences will serve to diminish fears and the perpetuation of stereotypes, and to allow opportunities to plan and implement activities in which all students are challenged and successful.

KIN 612. Analysis of Teaching and Learning. 3 credits.

An in-depth look at assessing and improving teaching. A systematic approach to improving teaching techniques and assessments of student learning will be discussed and implemented in a practical setting.

KIN 622. Motivation and Achievement in Sport Leadership. 3 credits.

The study of sport performance including achievement motivation, individual aggression, attribution theory and goal setting. Application of theoretical concepts to teaching and coaching for optimal performance.

KIN 625. Social Issues in Sport and Recreation Leadership. 3 credits.

Current research and literature in the sociology of sport. Emphasis is on sport in American culture; issues in international sport are considered.

KIN 631. Philosophy of Sport and Recreation Leadership. 3 credits.

A critical review of literature concerning the nature and significance of sport from a philosophic perspective, including current modes of inquiry. Implications for sport in education are also discussed.

KIN 640. Clinical Exercise Physiology II. 3 credits.

A study of the benefits, risks, strategies for exercise testing and programming for persons with respiratory, neuromuscular, skeletal and immunological diseases, as well as psychological disorders. Prevalence, economic ramifications, pathophysiology, clinical manifestations, assessment, pharmacology, potential benefits and risk of exercise and exercise programming strategies.

KIN 644. Metabolic and Cardiorespiratory Aspects of Exercise. 3 credits.

An advanced course in exercise physiology that examines the acute responses and chronic adaptations of the metabolic, cardiovascular, and respiratory systems. *Prerequisite: An undergraduate course in exercise physiology or permission of the instructor.*

KIN 645. Muscular, Hormonal, and Environmental Aspects of Exercise. 3 credits.

An advanced course in exercise physiology that examines the acute responses and chronic adaptations of the neuromuscular system, and hormonal and environmental factors that influence the body's response to exercise. *Prerequisite: An undergraduate course in exercise physiology or permission of the instructor.*

KIN 649 A, B, C. Practicum in Fitness Programs. 1 credit each.

A practicum designed to allow students in the adult fitness program to gain experience as an exercise leader, an exercise-testing technician, and in procedures used to prescribe exercise in healthy subjects and patients with chronic disease. *Prerequisite: Permission of the instructor.*

KIN 650. Exercise Testing, Evaluation and Prescription. 3 credits.

An in-depth analysis of preventive and rehabilitative exercise program design, exercise testing, electrocardiography and exercise prescription. *Prerequisite: KIN 644 or permission of instructor.*

KIN 655. Research Techniques. 3 credits.

Skill in the initiation, conduct and interpretation of research. Laboratory procedures in physical education, recreation, exercise science, and athletics are included as well as historical, philosophical and descriptive methods. Special emphasis is given to laboratory, experimental, field and action research.

KIN 670. Program Development for Wellness Centers. 3 credits.

A study of the development, implementation and administration of wellness/fitness programs that emphasize the adult population.

KIN 673. Fiscal Management in Sport and Recreation Leadership. 3 credits.

An overview of fiscal resources and financial administration of sport and recreation programs and facilities. The course will focus on the financial administration of public agencies, private organizations and commercial enterprises. Management areas relating to financial principles and policies, sources of revenue, types of expenditures, budget preparation, and preparation of grant proposals will be discussed.

KIN 675. Legal Aspects of Sport and Recreation Leadership. 3 credits.

A study of legal issues related to the administration of sport and recreation facilities, programs, and services. An in-depth analysis of the legal foundations and responsibilities of sport and recreation agencies including tort and constitutional law, liability and risk management, contractual law, human resource management, and the legislative and judicial processes.

KIN 678. Theories and Issues of Coaching. 3 credits.

Both theoretical and practical aspects of coaching in secondary schools and higher education.

KIN 680. Reading and Research. 3 credits.

Directed reading in designated areas and specialized interests. Investigating, researching and reporting. Course may not be repeated. *Prerequisite: Permission of the instructor.*

KIN 681. Internship in Exercise Science. 3-9 credits.

Provides students a practical experience in exercise testing and prescription, program administration and other professional responsibilities in wellness/fitness or clinical exercise physiology. Specific assignment is based on student need. Taken in the final semester of program. *Prerequisite: Permission of the instructor.*

KIN 683. Secondary Internship in Health and Physical Education. 6 credits.

An advanced supervised teaching experience at the middle or high school level in both health and physical education settings. Enables the teacher candidate an opportunity to apply effective teaching techniques and innovative forms of instruction and organization at the secondary level.

KIN 684. Group and Team Development: Theory, Research and Facilitation. 3 credits.

An introduction to theory, research and the practical considerations of group and team development. Skill development in leading groups and teams, facilitation and processing.

KIN 685. Internship in Sport and Recreation Leadership. 3-6 credits.

Practical experience in applying administrative theory to problems encountered in a professional setting. Specific assignments will be determined by the needs of the student. (Amount of credit will be determined by the amount of experience acquired; no more than six hours can be counted toward a degree program.) *Prerequisite: Permission of the instructor.*

KIN 697. Directed Research in Kinesiology and Recreation Studies. 3 credits.

Advanced research in kinesiology and/or recreation under the direction of a graduate adviser. Course will be graded on an S/U basis. Course may not be repeated. *Prerequisites: KIN 655 and permission of the instructor.*

KIN 698. Comprehensive Continuance. 1 credit.

Continued preparation in anticipation of the comprehensive examination. Course may be repeated as needed. *Prerequisite: Permission of the instructor.*

KIN 699. Thesis Continuance. 2 credits.

Continued study, research and writing in the area of thesis concentration. Course may be repeated as needed. *Prerequisite: Permission of the instructor.*

KIN 700. Thesis. 3-6 credits.

Prerequisites: KIN 655 or equivalent, and permission of the instructor.