Kinesiology (M.S.)

Department Head
Dr. Christopher Womack

Graduate Program Director
Dr. Nick Luden

Phone: (540) 568-6145
Website: http://www.jmu.edu/kinesiology

Professors
S. Nye, M. Saunders, J. Williams, C. Womack

Associate Professors
T. Hargens, N. Luden, T. Moran, S. Carson Sackett

Assistant Professors
E. Edwards, C. McKay, G. Young

Print Version of Catalog

Kinesiology

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 physical activity, exercise and sport.

Goals

Program goals are to help students:

- Identify and describe important issues relevant to physical activity, and exercise and sport science.
- Educate others about the relevance of physical activity, exercise and sport to individuals and to society.
• Develop and administrate safe, effective and scientifically based physical activity, exercise and sport programs that address individual, community and societal needs.
• Enable students to evaluate the quality of information germane to the disciplines of physical activity, and exercise and sport science.
• 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 a focus on exercise physiology that includes both a thesis and non-thesis track. 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 both 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 in Kinesiology**

This 33- to 36-credit hour program leads to a Master of Science degree with a concentration in exercise physiology. Students in this program receive broad-based preparation in exercise physiology including required course work in advanced exercise physiology topics, physiological testing, exercise prescription and research. Students may select either the thesis or non-thesis track and will have elective options in the areas of clinical exercise physiology, applied exercise physiology, nutrition, biology and graduate psychology. This program is designed to prepare students to pursue a doctoral degree in a related field or to enter a variety of workplaces related to clinical, sport, research, fitness, or health and wellness industries.

Students must complete core requirements and choose either the thesis track or non-thesis track. The thesis track requires 33 credits for graduation. The non-thesis track requires 36 credits for graduation.

The following 18 credits of core curriculum are required for all students:

**Core Requirements**

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<th>Credit Hours</th>
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<td>KIN 541</td>
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Choose one of the following tracks:

Thesis Track (15 credits)

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<tr>
<td>MATH 522</td>
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<td>KIN 700</td>
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Electives in consultation with adviser 6

Non-Thesis Track (18 credits)

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<td>KIN 700</td>
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</tbody>
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Electives in consultation with adviser 6

Non-Thesis Track (18 credits)
KIN 681. Internship in Exercise Science Note: Credits exceeding 3 can be used as elective credits 3-9
KIN 697. Directed Research in Kinesiology 3
Electives in consultation with adviser 12

In consultation with an adviser, students may choose their electives from the following:

KIN 540. Clinical Exercise Physiology I 3
NUTR 545. Nutrition and Exercise 3
KIN 547. Physiology of Performance Enhancement in Endurance Sports 3
NUTR 555. Theories and Practices of Weight Management 3
NUTR 582. Nutrition and Metabolism 3
KIN 640. Clinical Exercise Physiology II 3
KIN 643. Environmental Exercise Physiology 3

Students may also work with their advisors to seek approval of elective courses outside the department in areas related to their degree program such as biology, nutrition and graduate psychology. Course availability is contingent upon permission of instructor.

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**

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<tr>
<th>Course Code</th>
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<tr>
<td>KIN 511</td>
<td>Technology in Health and Physical Education</td>
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<td>KIN 512</td>
<td>Instructional Methods in Middle and Secondary Physical Education</td>
<td>3</td>
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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:
KIN 655. Research Techniques 3
HTH 655. Research Techniques 3
EDUC 630. Inquiry in Education 3
Approved elective 3

33

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. Prerequisite: KIN 306 or permission of instructor.

KIN 510. Motor Learning and Development. 3 credits.
This course provides understanding of motor development from early childhood through adulthood. The focus is on the constraints to development and the interaction between the environment, task and learner. The course provides an understanding of the learning processes underlying performance. Emphasis is given to the application in both teaching and coaching settings.

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.
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 515. Special Topics in Adapted Physical Education. 3 credits.
This course provides an in depth look into specific areas within the field of adapted physical education and adapted physical activity. This application-based course provides hands-on experiences that will allow students to work with individuals with disabilities in a variety of settings. Graduate students will also be asked to analyze and provide feedback on the instructional behaviors of the undergraduate student instructors.

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 541. Physical Activity Epidemiology. 3 credits.
The impact of physical activity on health will be examined with epidemiological evidence. This course will cover the principles of epidemiology research and review seminal studies that have led to our current understanding of the relationship between physical activity and health. Students will be able to critique current physical activity recommendations and public health initiatives through an understanding of the evolution and limitations of past and present studies.

KIN 542. Exercise Across the Lifespan. 3 credits.
An advanced course in exercise science that examines aspects of physical activity and exercise as they relate to specific phases of the human lifespan. This course will address the importance of physical activity for children, pregnant women, and older adults and will include an in-depth study of aspects of exercise physiology that are unique to these populations.

KIN 547. Physiology of Performance Enhancement in Endurance Sports. 3 credits.
A study of physiological aspects of athletic performance in endurance-based sports. Physiological traits associated with high levels of performance (such as VO2max, lactate threshold, movement economy) will be discussed, with respect to their influence in specific sport settings. Principles of endurance training methods will also be discussed, with specific application to program planning for athletes. Prerequisite: An undergraduate course in Exercise Physiology or permission of 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. Corequisite: KIN 683.

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 643. Environmental Exercise Physiology. 3 credits.**
An advanced course in exercise physiology that examines how physiological systems respond and adapt to exercise performed in challenging environmental conditions (i.e. high altitude, diving, heat, cold, and polluted environments). Prerequisites: KIN 644 and KIN 645.

**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.
A 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. **Corequisite:** KIN 612.

**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.** 3 credits.
Advanced research in kinesiology 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 Research. 3-6 credits.
This course is graded on a satisfactory/unsatisfactory (S/U) basis. Prerequisites: KIN 655 or equivalent, and permission of the instructor.