4500 Adapted Physical Activity Programs (3) 2 hrs. lecture; 2 hrs. lab. Preparation for teaching special activities to individuals with disabilities; organization and administration of physical activity programs.

4501 Special Topics in Kinesiology (3) May be repeated for a max. of 6 credits; consent of instructor. Preparation for teaching special activities to individuals with disabilities; organization and administration of physical activity programs. Recommended for students interested in additional study in specific aspects of kinesiology.

4505 Practicum in Human Movement Science (3) Prereq.: enrollment in the College of Education; senior standing. KIN 2500, 3511, 3514, 6 hrs. lab. Pass/fail grading. May be taken for a max. of 12 hrs. in the sequence. Observation and practice of skills, techniques, and protocols of patient care within local clinics, hospitals, skill nursing facilities, development disability centers, and other community settings.

4509 Sports Supplements (3) Introduction to federal regulations which enable supplements to be marketed, methods used to evaluate the benefits of supplements, and processes used to analyze specific supplements used in sports.

4510 Knowledge Structure Approach to Skills Analysis (3) Prereq.: PSYC 3083 and 4606. Introduction to the history of African Americans in sport and its larger effect on African American culture in general; introduction to the historical, sociological, economic, environmental, and physiological aspects of sport unique to African Americans.

4535 Practicum in Sport and Leisure Administration (6) Prereq.: 4510. Possible practicum work would be within two semesters of completing degree requirements or obtain permission of the department. Pass-fail grading. Practical application of theoretical techniques in a sport, leisure, or sport-related setting.

4900 Independent Study (1-3) May be taken for a max. of 6 sem. hrs. of credit. Open to advanced undergraduate or graduate students. Reading, research, and/or field work on selected topics.

7500 Practicum in Sport Management (3,6,9) Prereq.: a minimum of 21 sem. hrs. from the sport management MS program, a letter of agreement from prospective on-site supervisor, and consent of faculty advisor. Practical application of management techniques in a sport or sport-related setting; students work in a professional capacity for 10-30 hrs. per week during the semester under the guidance of an on-site supervisor.

7501 Advanced Research Methods (3) Analysis of multivariate research methods and statistical analysis used in kinesiology.

7502 Curriculum Construction in Physical Education (3) Contemporary educational trends in curriculum theory, issues of planning, implementation, and models derived from research and experience.

7503 Dimensions of Aging (3) Focus on physical, cognitive, and perceptual aspects and implications of the role of physical activity and lifestyle issues and their interaction with chronological aging and functional ability.

7504 Tests and Measurements in Kinesiology (3) Measurement theory applied to testing in educational, fitness, and other kinesiology settings.

7505 Problems in Kinesiology (3) May be taken for a max. of 6 hrs. of credit when topics vary. Individual study.

7507 Historical and Philosophical Foundations of Kinesiology (3) 

7508 Analysis of Human Movement (3) Mechanisms involved in the production of human movement and the techniques available for scientific analysis of such movement.

7510 Motor Learning (3) Cognitive and motor processes influencing the learning of motor skills; emphasis on assessing learning, changes during learning, attention, augmented feedback, transfer of learning, and practice conditions, with implications for a variety of skill instruction and rehabilitation contexts.

7511 Administrative Problems in Kinesiology (3) Organization and management theory and techniques for administration of programs in educational and fitness settings.

7512 Motor Control (3) Prereq.: consent of instructor. Neuromuscular control of human movement; emphasis on contrast between ecological and constructionist approaches.

7513 Seminar in Professional Preparation (3) Issues and trends in physical education; emphasis on undergraduate and graduate professional preparation.

7514 Pedagogy in Physical Education (3) Prereq.: KIN 7502 and admission to the doctoral program. Theory and research relating to systematized instruction in physical education.

7515 Theories of Achievement Motivation in Physical Activity (3) Theoretical achievement motivation as they apply in a variety of physical activity settings including motor skill acquisition, sport, exercise behavior, and rehabilitation.

7517 Advanced Topics in Motor Control (3) Prereq.: KIN 7512. May be repeated for a total of 6 sem. hrs. when topics vary. Selected topics linking advanced motor control topics across disciplines, medicine and research.

7518 Social Issues in Sport (3) Examination of the social construction of sport and the systems issues connected to contemporary theory.

7520 Motor Development (3) 2 hrs. lecture; 2 hrs. lab. Psychomotor development of children; implications for skill acquisition, learning and movement analysis and research; motor development in special children; research on youth sports; evaluation and assessment; and psychomotor performance assessment.

7521 Laboratory Techniques in Motor Behavior (3) Prereq.: KIN 7508 or equivalent and consent of instructor. 2 hrs. lecture; 2 hrs. lab. Application used in motor behavior and biomechanics labs; data acquisition and processing techniques; hardware and software associated with computerized data acquisition and processing; timing equipment; force plates; measurement equipment; motion analysis equipment; electromyography.

7522 Physical Education for Preschool and Elementary School Children (3) Experiences in developing and implementing a motor program for children at the preschool and elementary school level; philosophy, objectives, trends, teaching methods, and materials necessary for program development.

7523 Theories of Motor Skill Acquisition (3) Prereq.: KIN 7502 and 7520. For PhD motor control students. Issues in motor control and learning, i.e., central and peripheral mechanisms, theories of motor control, and short-term memory.

7525 Children and Sport (3) Open to graduate students from any area. Children's involvement in organized sports; understanding of the present structure of youth sports; research in child development, training, injuries, social psychology, skill acquisition, and coaching behavior; implications for children in sport.

7527 Seminar: Developmental Factors in Children's Motor-Skill Learning (3) Prereq.: KIN 7510 and 7520; or equivalent. For doctoral students only. Developmental learning theory and literature; effects of developmental factors on children's motor performance and learning.

7528 Sport Psychology (3) Problems of several areas of sport psychology related to the psychological processes and theories.

7530 Exercise Physiology (3) 2 hrs. lecture; 2 hrs. lab. Mechanics of cardiovascular and respiratory adjustments to exercise; exercise related to cardiovascular and physiological factors affecting physical performance; bioenergetics, cardiovascular and respiratory adjustments to exercise; exercise related to cardiovascular and physiological factors affecting physical performance; bioenergetics and physiological factors affecting physical performance.

7531 Structural and Functional Characteristics of the Developing Child (3) 2 hrs. lecture; 2 hrs. lab. Structural changes and growth of prepubertal and pubertal children related to function in physical activity.

7533 Exercise Testing in Health and Disease (3) Prereq.: KIN 7530. 1 hr. seminar; 4 hrs. lab. Theory and practice in evaluating fitness, prescribing exercise, and planning and supervising group programs for adults.

7534 Exercise in Health and Disease (3) Contraindications and valid uses of exercise in mediating risk factors.

7535 Neurosensory Aspects of Exercise (3) Prereq.: KIN 7530. Effects of exercise on muscle cell structure and function; neuromuscular integration and neural function in exercise.

7536 Cardiovascular and Respiratory Function in Exercise (3) Prereq.: KIN 7530. 2 hrs. lecture; 2 hrs. lab. Mechanics of cardiovascular and respiratory function related to exercise.

7537 Exercise and Environment (3) Prereq.: KIN 7530. 2 hrs. lecture; 2 hrs. lab. Effects of environmental conditions on performance of various types of exercise.

7538 Practicum in Cardiac Rehabilitation (6) Prereq.: KIN 7510, 7531, 7550. Admission on-site requirement is 20 hours per week. Important for exercise specialist, exercise leader, or graded exercise technician certification. Involves practical application of exercise testing, exercise prescription and exercise leadership for cardiac patients.

7539 Laboratory Techniques in Exercise Physiology (3) Prereq.: KIN 7530; 1 hr. lecture; 4 hrs. lab. Exercise physiology and college chemistry recommended. Laboratory techniques in exercise physiology; principles of metabolic measurement and assay procedures for quantification of dynamic changes in blood chemistry during exercise.

7541 Motor Ability Programs for Individuals with Disabilities (3) Prereq.: KIN 4500 or 4540 or equivalent. Structure of gross and fine motor abilities of individuals with disabilities; assessment of motor skills and physical fitness for individuals with disabilities.

7542 Motor Activity Programming for Individuals with Disabilities (3) Prereq.: KIN 7545. Motor activity programs developed from empirical research studies compared to those of an intuitive basis; planning for inclusive settings; implications of federal and state regulations.

7543 Program Approaches for Adapted Physical Activity (3) Prereq.: KIN 7545. Program implementation for special populations. Survey of approaches and strategies for promoting physical activity and healthy lifestyles for individuals with disabilities.

7550 Advanced Exercise Physiology (3) Prereq.: KIN 7530; 2 hrs. lecture; 2 hrs. lab; college chemistry, mathematics, physics recommended. Quantitative approach to both systematic and cellular control during exercise.

7551 Exercise Electrocadiography: Principles and Procedures (3) Prereq.: KIN 7510; 1 hr. lecture; 4 hrs. lab. Exercise physiology and college chemistry recommended. Physiological bases, practical considerations, and rhythm.
Identification of resting and exercise electrocardiograms.

1. **7500 Research in Physical Education (2)**
   - Prereq.: consent of instructor. Research practice and application in landscape architecture; small groups will use lectures, discussions, presentations, and other formats to explore advanced topics.

2. **7502 Critical Issues in Teaching Health and Physical Education (2)**
   - Prereq.: physical education cohort. Program of individual study under faculty guidance. Independent study proposals must be pre-approved by supervising faculty member and the School director.

3. **7503 The Teacher (3)**
   - Prereq.: physical education cohort. Critical theory and research; skills in finding and using research material; identification of patterns and themes related to pedagogical practices in health and physical education.

4. **7504 Advanced Elective in Landscape Architecture (3)**
   - Prereq.: permission of instructor. Research practice and application in landscape architecture; small groups will use lectures, discussions, presentations, and other formats to explore advanced topics.

5. **7101 Graduate Landscape Architecture (3)**
   - Prereq.: LA 2201. Development of landscape architectural projects; emphasis on the development of a vocabulary, out of fifth-year clinical experiences and course work.

6. **7102 Landscape Representation II (3)**
   - Prereq.: LA 1100, 2101, or equivalent. Introduction to two-dimensional design; spatial sequence, meaning, and aspects of contemporary practice of landscape architecture.

7. **7201 Research Methods (3)**
   - Prereq.: consent of School director. Independent study program of individual study under faculty guidance. Independent study proposals must be pre-approved by supervising faculty member and the School director.

8. **7301 Landscape Design III: Site Planning and Design (6)**
   - Prereq.: LA 2902 and 2101 or equivalent. 12 hrs. studio. Required field trip. Students are responsible for paying travel expenses associated with the course. Arrangement of buildings, circulation, and other landscape design elements; emphasis on earthwork and drainage.

9. **7302 Landscape Design IV: Community Design (6)**
   - Prereq.: LA 2902 and 2101 or equivalent. Major landscape design projects; emphasis on relationships of uses, transportation infrastructure, green infrastructure, public services, and a mix of housing and commercial types.

10. **7303 Landscape Technology II: Grading, Draining, and Roads (3)**
    - Prereq.: LA 2301 or equivalent; consent of instructor. 2 hrs. lecture; 2 hrs. studio. Advanced grading and drainage with emphasis on aesthetic aspects of grading and drainage, and best management practices and sustainability, landscape architectural systems and infrastructures including advanced roadway design and alignment.

11. **7302 Landscape Architecture (3)**
    - Prereq.: LA 2201. Major landscape design projects; emphasis on relationships of uses, transportation infrastructure, green infrastructure, public services, and a mix of housing and commercial types.

12. **7401 Plant Materials I (3)**
    - Prereq.: LA 2401 for undergraduate students; 1 hr. lecture; 4 hrs. lab. Identification and study of plant materials with specific recognition of the visual and ecological characteristics of plants used in landscape design.

13. **7402 Plant Materials II (3)**
    - Prereq.: LA 3401. 1 hr. lecture; 4 hrs. lab. Continuation of LA 3401 with the inclusion of basic principles of landscape design and its application to the selection of plants for use in landscape design.

14. **7403 Landscape Design: Landscape Planning and Development V (6)**
    - Prereq.: LA 3002 and 3002. 12 hrs. studio. Landscape planning and design at the community to the site development scale; emphasis on generating planning and design strategies for urbanization and development that are informed by an understanding of ecology and culture of the region, and based on principles of sustainability.

15. **7404 Landscape Architecture (3)**
    - Prereq.: LA 3002, or consent of instructor. Professional practice for landscape architects including issues associated with licensure, practice types, professional services, business development, contracts, and project management.

16. **7405 Field Studies in Landscape Architecture (1-3)**
    - May be taken for a max. of 6 hrs. of credit. Elective field trip. Students are responsible for paying travel expenses associated with this course. Field trip to landscape architectural office, projects, historic sites, and schools throughout the region, and based on principles of sustainability.

17. **4001 Plant Materials I (3)**
    - Prereq.: LA 4001. 12 hrs. studio. Required field trip. Students are responsible for paying travel expenses associated with the course. Studio projects addressing various aspects of landscape architecture.

18. **4101 Advanced Digital Representation (3)**
    - Prereq.: LA 1102, 2301, or equivalent. Advanced techniques in digital representation, such as 3-D modeling, terrain modeling, animation, advanced imaging, and rendering.

19. **4201 Theory and Methods of Landscape Planning (3)**
    - Prereq.: LA 2301 or 2302. 2 hrs. lecture; 2 hrs. studio. Landscape planning and design at the community to the site development scale; emphasis on generating planning and design strategies for urbanization and development that are informed by an understanding of ecology and culture of the region, and based on principles of sustainability.

20. **4301 Landscape Technology IV: Specialization (3)**
    - Prereq.: LA 3302 or equivalent. 2 hrs. lecture; 2 hrs. studio. Specialization topics in landscape architecture construction and design implementation.

21. **2201 Landscape History I (3)**
    - Development of earliest landscape traditions; relationship of humans to landscape in major cultures. Development of landscapes in Western Europe and America from the 15th to 18th centuries.

22. **2301 Landscape Technology I: Land Design (3)**
    - Prereq.: MATH 1021 and 1022, or consent of instructor. 1 hr. lecture; 8 hrs. lab. Pass-fail grading. Introduction to the techniques of landscape surveying and legal land descriptions; introduction to landscape architectural construction systems and the relationship between building plans, and structures, topographic mapping conventions, grading design, drainage and water management, roadway design and alignment, drainage and water management, roadway design and alignment, and the relationship of materials and design to structural, green infrastructure, public services, and a mix of housing and commercial types.

23. **2302 Landscape History II (3)**
    - Prereq.: LA 2201. Major landscape design projects; emphasis on relationships of uses, transportation infrastructure, green infrastructure, public services, and a mix of housing and commercial types.

24. **2303 Landscape Technology III: Design Detailing (3)**
    - Prereq.: LA 3003 or equivalent; consent of instructor. 2 hrs. lecture; 2 hrs. studio. Landscape planning and design at the community to the site development scale; emphasis on generating planning and design strategies for urbanization and development that are informed by an understanding of ecology and culture of the region, and based on principles of sustainability.

25. **2304 Landscape Design VI: Final Project (6)**
    - Prereq.: LA 7001. 12 hrs. studio. Intervention and critical review of major landscape theories and issues; identification and preparation for a comprehensive final project.

26. **2305 The Practice of Landscape Architecture (3)**
    - Prereq.: LA 3002, or consent of instructor. Professional practice for landscape architects including issues associated with licensure, practice types, professional services, business development, contracts, and project management.

27. **2306 Graduate Landscape Design I: Basic Design (6)**
    - Prereq.: consent of the student. 12 hrs. studio. Introduction to two- and three-dimensional design; spatial sequence, meaning and dynamic change; application to simple landscape designs.

28. **2307 Graduate Landscape Design II: Site Design (6)**
    - Prereq.: LA 7001. 12 hrs. studio. Arrangement of buildings, circulation, and other landscape design elements; emphasis ion earthwork and drainage.

29. **2308 Graduate Landscape Design III: Community Design (6)**
    - Prereq.: LA 7002 and 7101 or consent of the student. 12 hrs. studio. Concepts of a comprehensive landscape design and/or independent design project.

30. **2309 Graduate Landscape Design IV: Landscape Planning and Development (6)**
    - Prereq.: LA 7002, 7101, or consent of the student. 12 hrs. studio. Intervention and critical review of major landscape theories and issues; identification and preparation for a comprehensive final project.

31. **2310 Graduate Landscape Representation (3)**
    - Prereq.: LA 2201. Development of landscape architectural projects; emphasis on the development of a vocabulary, out of fifth-year clinical experiences and course work.

32. **2311 Graduate Landscape Architecture (3)**
    - Prereq.: LA 2201. Major landscape design projects; emphasis on relationships of uses, transportation infrastructure, green infrastructure, public services, and a mix of housing and commercial types.

33. **2312 Landscape Architecture (3)**
    - Exploration of contemporary landscape design from around the world, including historic landscapes and gardens; urban plazas, and pedestrian areas; parks and infrastructure.

34. **2313 Advanced Digital Representation (3)**
    - Prereq.: LA 3002, or equivalent. Advanced techniques in digital representation, such as 3-D modeling, terrain modeling, animation, advanced imaging, and rendering.

35. **2314 Theory and Methods of Landscape Planning (3)**
    - 2 hrs. lecture; 2 hrs. lab. Principal theoretical literature in landscape planning and development of theories and methods; basic skills in the use of GIS, global positioning systems (GPS), and remote sensing/image processing technology.

36. **2315 Advanced Representation (3)**
    - Prereq.: LA 2201, 2301, or equivalent. Advanced techniques in digital representation, such as 3-D modeling, terrain modeling, animation, advanced imaging, and rendering.

Identifying of resting and exercise electrocardiograms.