SPMD-SPORTS MEDICINE

SPMD 1110. Introduction to Athletic Training
3 Credits (3)
Introduction to the principles of athletic training. May be repeated up to 3 credits.
Learning Outcomes
1. Understand the historical development of athletic training and sports medicine.
2. Understand the knowledge and experiences needed to become a Certified Athletic Trainer.
3. Understand the specific responsibilities and duties of an athletic trainer.
4. Understand the diverse jobs settings within the profession of athletic training.
5. Understand the relationship between the athletic trainer and the sports medicine team.
6. Understand some of the general and specific injuries and medical conditions that occur in athletics;their causes, signs and symptoms, treatments, rehabilitation, and prevention.
7. Understand some of the contemporary issues and problems facing the athletic training profession.

SPMD 1120. Medical Terminology
3 Credits (3)
Study of the structure of medical language with emphasis on sports medicine-related terminology. To include analysis and interpretation of medical documentation. Restricted to: Las Cruces campus only.
Learning Outcomes
1. Master the fundamentals of word analysis, including the separation of terms into word roots or combining forms, common prefixes, and suffixes.
2. Differentiate types of medical terms and the relationships among terms.
3. Develop a proficiency in the use of physiological and anatomical terms as reflected in medical documents.
4. Master the terms, words, phrases, and symbols that describe the human body in its various states of health and disease, including essential anatomical terms.

SPMD 1190. Clinical Practicum I
2 Credits (2)
Introduction to the clinical aspects of the athletic training education program. Must maintain at least 3.0 GPA. May be repeated up to 4 credits.
Learning Outcomes
1. The Athletic Training Program application procedures.
2. The ability to perform selected taping and wrapping techniques.
3. Knowledge of HIPAA guidelines, pre-participation physical examinations, environmental illnesses, the history of Athletic Training and its governing bodies, Evidence Based Practice and its implications in the field of athletic training, evaluation procedures for the injured athlete, NMSU AT program and its affiliated clinical sites.
4. Proper documentation for the athletic training environment including SOAP notes.

SPMD 1195. Clinical Practicum II
3 Credits (3)
Athletic training related content and psycho-motor skills are introduced, enhanced, and assessed in the classroom and clinical rotations. Emphasis is on competencies and proficiencies previously instructed in didactic courses while providing increased depth of understanding and clinical practice. Must maintain a 3.0 GPA. May be repeated up to 3 credits.
Learning Outcomes
1. Demonstrate knowledge and skill in emergency situation prevention, recognition, and management.
2. Demonstrate proficiency in basic skills of musculoskeletal injury recognition and management.
3. Demonstrate competency in basic pre-participation exam skills, including but not limited to taking vital signs.
4. Demonstrate competency in wound care and first aid.

SPMD 1310. Introduction to Kinesiology
3 Credits (3)
An introduction to the field of Kinesiology which will explore areas such as exercise physiology, sport and exercise psychology, motor behavior, biomechanics, strength and conditioning, exercise prescription, as well as professional and graduate programs, and allied health and applied careers opportunities.
Learning Outcomes

SPMD 1350. Social Foundations of Physical Activity
3 Credits (3)
Historical and cultural foundations and vocational, scientific, and educational data on careers in health education, physical education, and recreation.
Learning Outcomes
1. Improve students' knowledge of foundations of physical education. (Research) (Standard 4 j, k, l, m, o, p)
2. Improve students' abilities to analyze current physical activity issues based on historical, philosophical, sociological, and psychological perspectives. (Research) (Standard 4 l, m, e, g)
3. Improve students' knowledge of and ability to critically analyze how gender, race, social class, sexual orientation, and ability issues affect physical education and performance programs. (Research, Diversity) (Standard 4j, k, l, m, o; Standard 2 d, g, j, f, k)
4. Improve students' knowledge of forces influencing the development of physical education programs. In particular, attitudes, values, and beliefs about gender, race, social class, sexual orientation, and ability, etc. (Diversity, Practitioners, Reflection, Pedagogy) (Standard 1 a, b, h, l; Standard 4 j, k, l, m, o; Standard 2 a, d, g, j, f, k)
5. Improve students' knowledge of strategies for becoming an advocate in the school and/or community to promote a variety of physical activity opportunities. (Practitioners) (Standard 2 m, n; Standard 3 n, o, p, q, r; Standard 10 d, j, p
6. Improve students' knowledge of current educational issues and trends. In particular, socio-cultural issues that affect educational, fitness, and sports settings. (Diversity, Research) (Standard 4 j, k, l, m,o, p Standard 9 a, c, e, f m, n)
7. Improve students' knowledge of how students' learning is influenced by individual experiences, talents, and prior learning, including language and family/community values and conditions. (Diversity, Research) (Standard 1 b, h, l; Standard 2 d, g, j, k, m, n, o; Standard 3 l)
8. Improve students' knowledge of the impact of international changes on the content of physical education, fitness, and sports programs. (Research) (Standard 4 j, k, l, m, o, p)

9. Improve students' ability to critically analyze how gender, race, sexuality and social class issues affect how we view the body, and how these views can affect students' health and participation in physical education, fitness, and sports programs. (Diversity, Reflection) (Standard 2 d, g, j, f, k, m, o) 1
10. Improve students' ability to become critically aware of how their feelings, beliefs, and values in relation to gender, race, social class, sexual orientation, and ability issues will affect their abilities to work as professionals in the fields of physical education, sport, or fitness. (Diversity, Reflection) (Standard 2d, g, j, f, k, m, o Standard 9 e, d, g, l, m) 1
11. Improve students' knowledge of and ability to critically analyze cultural stereotypes of diverse populations of people. (Diversity) (Standard 2 d, g, j, f, k, m, o) 1
12. Improve students' knowledge of how cultural stereotypes influence the development of physical education, fitness and sport programs. (Research, Diversity) (Standard 2 d, g, j, f, k, m, o; Standard 4 j, k, m, o, p, q Standard 8 p) 1
13. Improve students' knowledge of how groups influence individuals, and how individuals influence groups in a democratic society. (Diversity) (Standard 2 d, g, j, f, k, m, o; Standard 4 m, p;) 1
14. Improve students' abilities to communicate in ways that demonstrate sensitivity to all learners. (Diversity, Effectiveness) (Standard 1 d, h, l; Standard 2 d, g, j, f, k, m, o) 1
15. Students will demonstrate through writing the ability to apply the issues discussed in class to their specific fields in ways that benefit society. (Evaluation) (Standard 9 e, g, l, m) 1
16. Students will improve their ability to take the content from readings and present it in thought provoking ways to their classmates. (Research, Evaluation, Reflection) (Standard 9 e, g, l, m; Standard 10 a, d, h, n) 1
17. Writing proficiency is required for a passing grade in this course. (Standard 4 l) 1
18. Improve students' abilities to use computers and other technologies to communicate, network, and/or foster inquiry. (Standard 10 g) 1
19. Consult professional literature, colleagues, and other resources to develop as a professional.(Standard 10 e, f, h, l, n, r)

SPMD 2210. Anatomy and Physiology I
3 Credits (3)
Detailed study of the structure and function of the human musculoskeletal, cardiovascular, respiratory, and peripheral nervous systems. Designed specifically for students interested in allied health professions.
Learning Outcomes
1. The student will learn and identify bones, connective tissue, joints and muscular structures of the human body.
2. The student will study joints and associated structures of the body.
3. The student will learn about skeletal muscle, origins, insertions, and actions.
4. The student will learn about the fundamentals of the nervous system and associated structures.
5. The student will learn about smooth and cardiac muscle and their association actions.
6. The student will learn the structures associated with the cardiovascular system (heart and blood vessels).
7. The student will learn the location of all visceral organs.
8. Evaluation of knowledge is determined through practical identification of anatomical structures via written opened ended exams.

SPMD 2210L. Anatomy and Physiology Laboratory
1 Credit (1P)
Students will engage in activities designed to enhance appreciation of the anatomical structures related to the content areas for SPMD 2210. Restricted to Las Cruces campus only.
Learning Outcomes
1. The student will learn and identify bones, connective tissue, joints and muscular structures of the human body.
2. The student will study joints and associated structures of the body.
3. The student will learn about skeletal muscle, origins, insertions, and actions.
4. The student will learn about the fundamentals of the nervous system and associated structures.
5. The student will learn about smooth and cardiac muscle and their association actions.
6. The student will learn the structures associated with the cardiovascular system (heart and blood vessels).
7. The student will learn the location of all visceral organs.
8. Evaluation of knowledge is determined through practical identification of anatomical structures via written opened ended exams.

SPMD 2225. Anatomy and Physiology II
3 Credits (3)
This course is the second of two that serve as an introduction to human anatomy and physiology for any student interested in allied health and/or kinesiology. The course entails describing, explaining, and analyzing structure and function from the submicroscopic to the organismal level with emphasis on specific cellular, tissue, and organ structure and physiology, and organ system structure and function# specifically the endocrine, urinary, digestive, integumentary, renal, central nervous, and reproductive systems. Additionally, an analysis of these concepts is included: fluid and electrolyte balance, pregnancy, growth and development from zygote to newborn, and heredity.
Prerequisite: SPMD 2210 or BIOL 2210.
Learning Outcomes
1. Identify and describe the major anatomical features of the endocrine, lymphatic, digestive, integumentary, renal, urinary, and reproductive systems.
2. Analyze the physiological roles of the endocrine, lymphatic, digestive, urinary, central nervous, immune, and reproductive systems in maintaining homeostasis in the human body.
3. Explain how fluid and electrolyte balance is maintained in the human body.
4. Compare and contrast the anatomy and physiology of male and female reproductive systems.
5. Describe pregnancy from conception to parturition including human growth and development from zygote to newborn.
6. Explain heredity and genetic control.

SPMD 2225L. Anatomy and Physiology II Lab
1 Credit (1)
This is the second in a series of two laboratory courses designed to introduce laboratory practices and techniques for human anatomy and physiology, from the basic cell structure through the organ system level#

specifically the endocrine, digestive, lymphatic, respiratory, urinary, and reproductive systems.
Prerequisites: SPMD 2210; SPMD 2210L; or BIOL 2210; BIOL 2210L.
Learning Outcomes

1. Apply the scientific method correctly.
2. Collect, analyze, and interpret scientific data.
3. Use laboratory equipment correctly and safely.
4. Identify the anatomical components of human tissues, organs, and organ systems using models, diagrams, illustrations, or cadaver specimens.
5. Describe the functional characteristics of human tissues, organs, and organ systems using models, diagrams, illustrations, or cadaver specimens.
6. Analyze the physiological processes of the endocrine, lymphatic, respiratory, digestive, urinary, and reproductive systems.
7. Analyze the physiological processes of fluid and electrolyte balance and acid base balance in the human body.
8. Analyze heredity and genetic control.

SPMD 2250. Fitness for Health and Sport
3 Credits (3)
A study of the fitness needs for health enhancement and sport participation.
Learning Outcomes

1. Recognize the importance of incorporating positive fitness/wellness habits within one's lifestyle in terms of enhancing longevity, disease prevention, and overall quality of life.
2. Examine various physiological benefits and adaptations to such factors as muscular strength, muscular endurance, cardiovascular fitness, flexibility, and body composition when certain stimuli are applied to each. Assessment of these characteristics will be witnessed primarily in practical experiences within the course's laboratory settings.
3. Identify current trends and/or health patterns within society in regards to scientific findings, declination in health habits, and increases in health ailments.
4. Compare various nutritional concepts, specifically proper dietary habits and their impact on weight management aspects.
5. Describe the role physical activity and sport specific training play on competitive athletic performance.

SPMD 2310. Career Preparation
1 Credit (1)
From concept to implementation: Career exploration, setting up degree plans, finding graduate programs, developing professional resumes, writing letters of application, seeking letters of recommendation, and interview preparation.
Learning Outcomes

1. Career opportunities within human movement and allied health fields
2. Chose both a primary and secondary career of their interest
3. Search for appropriate graduate schools to match their career choices
4. Create a plan by aligning their undergraduate curriculum with their career choices
5. Explore additional education (dual majors, minors, and certifications specific to their chosen field)
6. Study and create a professional resume
7. Create a curriculum vita as a historical reference for future job prospects
8. Write a professional letter of application for jobs and school applications
9. Learn how to seek "outstanding' letters of recommendation 1
10. Study appropriate interview protocol 1
11. Practice interviews (one on one, panel and group)

SPMD 3050. Therapeutic Modalities
4 Credits (4)
The physiological effects, indications, contraindication, dosage, and maintenance of therapeutic modalities related to the treatment of athletic or activity-related injuries. May be repeated up to 4 credits.
Prerequisite: SPMD 2210 or BIOL 2210; 2.75 GPA.
Learning Outcomes

1. Demonstrate proper assessment techniques to identify appropriate therapeutic modalities for the treatment of injury and illnesses.
2. Design treatment plans based upon sound clinical assessment and appropriate selection of modalities that address the physiological and psychological needs of the patient.
3. Demonstrate competence with the application of a wide variety of modalities including patient preparation, modality application and modification based upon clinical findings using principles of evidence based practice.
4. Perform appropriate documentation of treatments to include patient history, evaluation, treatment goals, expectations and treatment outcomes.
5. Demonstrate competence with the collection and analysis of baseline and post-treatment data to evaluate and interpret treatment outcomes based upon principles of evidence-based practice.

SPMD 3110. Racquet Sports
2 Credits (2)
Knowledge and skills related to the racquet sports of tennis, badminton, and pickleball with emphasis on developmental strategies and skill performance that influences pedagogical content knowledge. Administrative issues will be addressed.

SPMD 3120. Theory and Technique of Lifelong Outdoor Leisure Activities
2 Credits (2)
Knowledge and skills related to lifelong outdoor leisure activities, including the examination of environmental science and awareness, kinesiology, and fundamental motor skills.

SPMD 3130. Theory and Technique of Sports and Games
2 Credits (2)
Knowledge and skills related to team sports and games, with emphasis on developmental strategies and skill performance that influence pedagogical content knowledge. Administrative issues will also be addressed.

SPMD 3140. Designing Student Centered Afterschool Physical Activity Clubs
3 Credits (3)
Knowledge, skills and field based practical application for creating student centered and student designed after school physical activity clubs.

SPMD 3150. Theory and Technique of Dance and Rhythms
2 Credits (2)
Knowledge and skills related to dance and rhythms, with emphasis on the analysis of dance elements and its role in physical education.

SPMD 3160. Elementary School Physical Education
3 Credits (2+2P)

Methods for teaching physical education at the elementary level. Primary focus on creating a learning environment for the acquisition and enhancement of developmentally appropriate locomotor, manipulative, and nonmanipulative skills. Field experience included. Consent of Instructor required.
Prerequisite: GPA of 2.5.
Learning Outcomes

1. Improve your knowledge of K-5 physical education content, disciplinary concepts, and tools of inquiry related to the development of a physically educated person.
2. Improve your knowledge of and ability to plan instruction based on curriculum goals/objectives and students' experiences.
3. Improve your ability to design and teach developmentally appropriate K-5 physical education curriculum for diverse learners.
4. Improve your knowledge of, and ability to, teach a variety of manipulative, nonmanipulative and locomotor skills and concepts.
5. Improve your ability to teach using a variety of strategies such as cooperative learning, problem-based learning, direct instruction that facilitate learning.
6. Improve your ability to plan effective units/lessons to insure equity and sensitivity to the needs of students with diverse characteristics, including, critically analyzing content/curriculum in light of broad goals for education and b) structuring a safe, educational environment that facilitates learning for all students.
7. Improve your knowledge of and ability to help individuals work productively and cooperatively with others.
8. Improve your ability to create an equitable learning climate in which individual differences are respected and be able to model, teach, and integrate multicultural awareness, acceptance, and appreciation.
9. Improve your knowledge of and ability to incorporate critical thinking, problem solving and creative exploration into your lessons. 1
10. Improve your knowledge of professional literature, research, organizations, and other technological resources for continuing professional development. 1
11. Improve your knowledge of and ability to use appropriate professional behavior. 1
12. Improve your ability to model appropriate verbal and written communications. 1
13. Improve your ability to encourage students to recognize, question, and interpret ideas from a variety of perspectives.

SPMD 3240. Research Methods in Kinesiology
3 Credits (3)
This course will provide you with a foundational understanding of research methods. Specifically, the course is designed to prepare you to critically read, understand, and evaluate research; retrieve scholarly articles; and develop research-related skills for future graduate education and/or professional work in kinesiology.
Learning Outcomes

1. Research a topic of interest using scholarly sources.
2. Identify a research problem based on relevant literature.
3. Compare research methods in various kinesiology subdisciplines.
4. Discuss ethical issues in research.
5. Design a research methodology to answer a kinesiology question.

SPMD 3250. Introduction to Exercise Science: Exercise Physiology and Biomechanics
3 Credits (3)
This course serves to provide a broad introduction to both the physiology of exercise and the mechanics of human movement. The conceptual framework of the course will allow for the development of a broad knowledge base regarding these concepts and the latter portions of the course will focus on real world application of the concepts.
Learning Outcomes

1. Students will learn a basic introduction to both exercise physiology and biomechanics and describe physiological systems and their relationship to exercise.
2. Explain how different forces affect human movement.
3. Evaluate current research in exercise physiology and biomechanics.
4. Apply exercise science concepts to real-world examples.
5. Integrate exercise science concepts into a physical activity lesson.

SPMD 3310. Lifetime Activities
2 Credits (2)
Knowledge and skills related to the lifetime activities of swimming, weight training, and other fitness promoting activities with emphasis on learning progressions.
Prerequisite: GPA 2.5.
Learning Outcomes

1. All course objectives are linked to the InTASC Teaching Standards
2. Improve your ability to design and teach developmentally appropriate fitness lesson plans for diverse learners (e.g. aerobics, yoga, strength training). (Standard 7 a, b, c, l, j Standard 8 a, b, d)
3. Improve your ability to modify instructions, lesson plans and tasks based on students' strengths and needs. (Standard 1 b, Standard 3 e, Standard 7 b, c, i, j, l, Standard 8 a, b, d)
4. Improve your knowledge of, and ability to teach a variety fitness content (Standard 7 a, g, h, k, l, n)
5. Improve your ability to plan effective lesson plans to insure equity and sensitivity to students with diverse characteristics. This includes structuring a safe, educational environment that facilitates learning for all students. (Standard 3, e, Standard 7 q, i)
6. Improve your ability to use self-assessment and peer-assessment to reflect on your teaching and plan for adaptations/adjustments (Standard 8 b, d, Standard 9 g).
7. Improve your ability to evaluate and modify instructional resources and curriculum to better meet the needs of their students. (Standard 4 f, Standard 7 g, Standard 8 a)

SPMD 3350. Inferential Statistics in Sport and Exercise Science
3 Credits (3)
Statistical concepts and methods basic to experiential research to include normal distribution, z-tests, t-tests, analysis of variance and regression analysis. An understanding of sport and exercise science theory is required for students enrolling in this course.
Learning Outcomes

1. Express mathematical information symbolically, visually, numerically, and verbally.
2. Employ quantitative methods, such as arithmetic, algebra, geometry, or statistics to solve problems.
3. Evaluate mathematical results for reasonableness.
4. Employ technology to organize, analyze, and present statistical information.
5. Interpret and draw inferences from mathematical models such as formulas, graphs, tables, and schematics.
6. Critically evaluate statistical outcomes for their practical significance.

SPMD 3410. Exercise Physiology
3 Credits (3)
Basic physiological principles as they apply to exercise and fitness programs. Laboratory experiences included. Requires 2.75 GPA.
Prerequisite: SPMD 2210 or BIOL 2210; GPA 2.75.
Learning Outcomes
1. Describe the structure and function of skeletal muscle.
2. Illustrate physiological responses and adaptations to acute bout of exercise as well as to exercise training.
3. Describe the structure and function of the cardiorespiratory system.
4. Describe age and sex considerations in sport and exercise.
5. Demonstrate effects of physical activity for health and fitness.
6. Explain the intervention strategies for athletic success.
7. Describe the laboratory procedures used to study the human body system.

SPMD 3410L. Exercise Physiology Lab
1 Credit (1P)
Laboratory experiments emphasizing the understanding of fundamental physiological mechanisms, regulating responses, and adaptation to exercise. Basic analytical methodologies pertaining to the energy, muscular and circulatorespiratory systems. Includes factors affecting physiological performance capacities and experimental basis of exercise assessment and training.
Prerequisite: SPMD 2210, SPMD 2210L.
Corequisite: SPMD 3410.
Learning Outcomes
1. Develop basic skills and competencies in clinical and experimental laboratory assessment techniques. Emphasis is placed on a healthy population with introductory concepts for special populations.
2. Understand the theory behind basic tests used in the exercise physiology laboratory.

SPMD 3450. Biomechanics
3 Credits (3)
The application of anatomical, mechanical and electrical concepts to better understand the fundamental nature of human movement.
Prerequisite: SPMD 2210 or BIOL 2210, and GPA of 2.75.
Learning Outcomes
1. Understand how human motion is generated using basic anatomical, kinematic, and kinetic concepts, laws, and principles.
2. Demonstrate an understanding of linear and angular motion.
3. Describe human motion using appropriate, well-defined terminology.
4. Demonstrate an understanding of how the body is affected by forces.
5. Utilize kinematic and kinetic concepts to solve computational and practical problems.

SPMD 3450L. Biomechanics Laboratory
1 Credit (1)
This course serves to provide an introduction to human movement and its analysis. The conceptual framework of the course will allow for the application of anatomical, mechanical, and electrical concepts in order to better understand the fundamental nature of movement.
Prerequisite: SPMD 2210 or BIOL 2210, GPA 2.75.
Corequisite: SPMD 3450.
Learning Outcomes
1. Utilize kinematic and kinetic concepts to solve computational and practical problems.
2. Gain exposure to the various data collection and analysis tools in biomechanics.
3. Apply conceptual biomechanics knowledge to biomechanics datasets.
4. Collaborate in student teams to develop a biomechanics research proposal.

SPMD 3550. Psychology of Sport
3 Credits (3)
Development of coaching techniques to enhance sport performance based on understanding and use of psychological principles.
Prerequisite: GPA 2.75.
Learning Outcomes
1. Identify psychological characteristics associated with peak performance.
2. Recognize and define the psychological constructs including, but not limited to, confidence, motivation, stress/anxiety, and arousal.
3. Understand how personal factors and situational factors can affect human performance.
4. Describe and explain factors practitioners should consider when diagnosing, designing, and implementing a mental training intervention.
5. Read, evaluate, and apply sport psychology literature.

SPMD 3610. Health and Exercise Psychology
3 Credits (3)
The course examines the reciprocal relationship among physical activity, exercise behavior, and psychological determinants associated with adopting and maintaining an exercise program. Topics include theories of behavioral change, exercise psychology interventions, the benefits/pitfalls of exercise, and psychological factors influencing patient rehabilitation.
Prerequisite: GPA 2.75.
Learning Outcomes
1. Describe and compare various theories for explaining health and exercise behaviors.
2. Define key constructs prevalent in motivating clients to maintain or enhance health and exercise behaviors.
3. Describe and explain relationships between various antecedents of exercise and exercise as well as between exercise and various outcomes.
4. Apply health and exercise psychology constructs, such as motivation, mental health, and personality, to realistic scenarios to help promote health and exercise behaviors.

SPMD 3650V. Motor Development
3 Credits (3)
Covers development of motor skills from infancy through maturity. Focus on the principles of motor development, early motor behavior, stage theory, and assessment. Field experiences will augment lecture and readings.
Prerequisite: GPA 2.5.
Learning Outcomes
1. Define and discuss key terms, concepts, and theories related to lifespan motor development.
2. Analyze the various constraints that surround the development of motor skills and discuss how they contribute to the resulting motor skill behavior.
3. Explain key processes, sequences, factors, and milestones related to various stages of motor development across the life span.

4. Apply theoretical knowledge in a real-world setting through structured field observations of children at various lifespan and developmental stages.
5. Understand basic biomechanical processes as they apply to developmental change.
6. Describe the qualitative as well as quantitative changes that occur in fundamental motor skills (walking, running, jumping, hopping, throwing, kicking, catching, and striking).
7. Assess developmental levels of fundamental motor skills on video and in real-world settings.
8. Identify motor development phenomena that are universal while applying concepts of environmental and sociocultural constraints that contribute to individual variability in motor development.

SPMD 3710. Motor Learning
3 Credits (3)
An examination of the theoretical foundations and related literature that underline the learning, performing, and retention of motor skills with implications for effective teaching and coaching.
Prerequisite: GPA 2.5.
Learning Outcomes
1. Assess functional differences between motor skill types.
2. Compare motor control theories and how they control human movement.
3. Critically evaluate current research in motor learning.
4. Recommend strategies to improve motor learning in both therapy and sport settings.
5. Facilitate a practical example of motor learning over time.

SPMD 4015. Therapeutic Exercise
3 Credits (3)
The physiological effects, indications, contraindications, dosage, and maintenance of therapeutic modalities related to the treatment of athletic or activity-related injuries. Must maintain a 3.0 GPA. May be repeated up to 3 credits.
Learning Outcomes
1. Apply appropriate clinical reasoning to the selection of therapeutic exercises based upon evidence-based practice guidelines, relevant physical findings, indications, contradictions and precautions.
2. Demonstrate appropriate application of therapeutic exercises and techniques including selection, application, patient instruction, and documentation.
3. Design an individualized therapeutic exercise program incorporating appropriate modifications for tissue repair timelines, physiological and psychological factors, and any additional clinical findings.
4. Demonstrate effective assessment skills to determine safe levels of physical activity for patients.

SPMD 4095. Clinical Practicum VII
3 Credits (3)
Athletic training psycho-motor skills are enhanced and assessed by a preceptor during clinical rotations. Emphasis is on competencies and proficiencies previously instructed in didactic courses. Students may complete a general medical rotation as part of this course. Must maintain 3.0 GPA. Consent of Instructor required. Restricted to: Athletic Training majors.
Learning Outcomes
1. Be prepared to sit for the Board of Certification (BOC) examination.
2. Confidently understand the BOC exam format, and method of delivery.
3. Meet the requirements to maintain certification, including evidence based practice requirements and continuing education units and their reporting cycles.
4. Demonstrate competence in in the following educational content areas for the practice of Athletic Training: evidence-based practice, prevention and health promotion, clinical examination and diagnosis, acute care of injury and illness, therapeutic interventions, psychosocial strategies and referral, healthcare administration, professional development and responsibility.

SPMD 4210. Advanced Exercise Physiology
3 Credits (3)
Detailed study of the integrated response of neuromuscular, cardiovascular, and respiratory systems to acute and chronic exercise, nutrition, and environmental conditions with a strong emphasis on laboratory experiences.
Prerequisite: SPMD 3410 and GPA of 2.75 or consent of instructor.
Learning Outcomes
1. Fundamental concepts about nutrition and it application to human performance
2. Advanced understanding of nutrition and its association with human bioenergetics
3. Human bioenergetics and its responsibility for performance enhancement and outcomes
4. Energy transfer and expenditure under various physical and environmental conditions
5. Pulmonary and cardiovascular responses to exercise
6. Cardiovascular and cellular adaptations to altitude

SPMD 4250. Principles of Strength and Conditioning
3 Credits (3)
Application of research, theory, and methods of high-intensity, resistive overload training. Performance-specific topics include management, nutrition. Requires SPMD 2210 and SPMD 3410; GPA of 2.75.
Prerequisite: SPMD 3410; SPMD 2210 or BIOL 2210; GPA 2.75.
Learning Outcomes
1. Students will examine both applied and theory-based strength conditioning concepts by applying designated guidelines set forth by the National Strength and Conditioning Association (NSCA).
2. Students will discuss various acute and chronic human performance adaptations by examining practical examples involving (but not limited to) musculoskeletal adaptation, muscular power output, speed and agility characteristics, plyometric training, body composition characteristics, and cardiovascular characteristics, among many others.
3. Students will recognize strength and conditioning adaptations regarding specific groups, such as youth, female, and elderly populations by contrasting various case studies that feature these populations.
4. Students will examine the administration of human performance testing/assessments on subjects of various skill-levels, experience, and athletic backgrounds, while understanding reliability and validity concerns of said assessments, accomplishing this by participating in practical-based performance testing featured in the course's lab component.
5. Students will analyze strength and conditioning testing results in order to properly prescribe a complete exercise regimen for an individual, based on their sport- or fitness-specific goals, accomplishing this primarily through the course's capstone final project.

6. Students will examine the practicality of strength training towards today's athlete as well as how proper periodization implementation affects this mode of activity, accomplishing this by applying both traditional and undulated periodization guidelines.
7. This course will prepare students to sit for the NSCA's Certified Strength Conditioning Specialist (CSCS) exam by relying upon human performance guidelines set forth by the NSCA along with implementing published study resources provided by the NSCA.

SPMD 4250L. Principles of Strength and Conditioning Laboratory
1 Credit (2P)
An applied examination of the theory, principles, rules and regulations associated with various strength and conditioning exercises to include but not limited to Olympic lifting, powerlifting, bodybuilding, plyometrics, speed, agility and speed-endurance development. Lab required for Kinesiology majors.
Prerequisite: SPMD 2210 or BIOL 2210, and SPMD 3410; GPA 2.75.
Corequisite: SPMD 4250.
Learning Outcomes
1. Students will examine commonly relied upon human performance testing practices towards various exercise science-based concepts by applying guidelines set forth by the National Strength and Conditioning Association (NSCA).
2. Students will assess various physiological adaptations by conducting performance tests that target muscular power output, speed, agility, anaerobic capacity, aerobic capacity, vertical jumping, plyometric training, and non-traditional training modes (among numerous others).
3. Students will demonstrate proficiency towards proper administration of human performance assessments by effectively conducting, instructing, and demonstrating said assessments and physical capabilities.
4. Students will properly evaluate and interpret human performance testing results by documenting their own performance test results as well their peers' and applying these data to set norms commonly relied upon by professionals in the field.
5. Students will value the importance of effective and efficient training methodologies based on the varying needs of today's physically active population, accomplished by examining the role physical activity and sport-specific training play on competitive athletic performance.
6. Students will use this lab to prepare and sit for the NSCA's Certified Strength Conditioning Specialist (CSCS) exam by relying upon human performance guidelines set forth by the NSCA along with implementing published study resources provided by the NSCA.

SPMD 4350. Exercise Testing and Prescription
3 Credits (3)
This combined lecture and lab class introduces students to the scientific basis for and principles of exercise testing and prescription. The focus is on basic approaches to exercise testing and prescription for healthy adults, while application to some special populations with chronic disease will be discussed.
Prerequisite: SPMD 2210 or BIOL 2210; SPMD 3410; GPA 2.75.
Learning Outcomes
1. Students will examine the application and procedures of both fitness and clinical based exercise tests commonly used in the Kinesiology field by participating in practical lab sessions conducted within this course.
2. Students will examine appropriate exercise prescription principles designed for healthy adults by applying published ACSM guidelines to various hypothetical subjects and case studies used in this course.
3. Students will analyze appropriate exercise programming strategies used by today's practitioners by studying such concepts as established physical activity (PA) minimums and defined lifestyle risks for cardiovascular disease (CVD).
4. Students will compare various pre-participation measures for exercise by utilizing such instruments as the PAR-Q and ACSM Algorithm screening tools.
5. This course will prepare students to sit for ACSM's credential-based exams by relying upon exercise prescription guidelines set forth by ACSM along with implementing published study resources provided by ACSM.

SPMD 4410. Exercise for Special Populations
3 Credits (3)
Fundamentals of kinesiology adapted for adults with various diseases and disabilities. Focus will be on the application of exercise assessment and prescription for selected conditions.
Prerequisite: SPMD 3410 or consent of instructor; GPA of 2.75.
Learning Outcomes
1. To develop an understanding of the pathophysiology of various cardiovascular, pulmonary, metabolic, skeletal muscle, orthopedic, and mental diseases.
2. To provide a medical perspective in the treatment and management of individuals with these conditions in which exercise therapy may be beneficial.
3. To provide a sound understanding of exercise testing and prescription for a variety of chronic disease states.
4. To be able to assess, interpret, and evaluate case studies of diseased individuals and to develop comprehensive rehabilitation programs based on this information.
5. To develop the ability to articulate / present information of various diseases / conditions in a professional manner both formally and in a one on one setting.

SPMD 4450. Pathophysiology and Human Function(s)
3 Credits (3)
Students will discuss basic concepts of pathophysiology such as inflammation & repair, infectious diseases, neoplasms, and diseases of specific physiological systems. In addition, students will discuss a variety of case studies, and in so doing will be able to relate pathophysiologic conditions to symptoms, activity restrictions and disability.
Prerequisite: SPMD 2210 or BIOL 2210; SPMD 2210L or BIOL 2210L; SPMD 3410; GPA 2.75.
Learning Outcomes
1. Students will develop knowledge about basic neurophysiological function of the central and peripheral nervous system
2. Individuals will develop knowledge about motor control theory and assessment of human movement.
3. Students will demonstrate their knowledge about the control processes of both gross and fine motor skills.
4. Students will apply knowledge of sensory physiology to the relationship with human performance.
5. Individuals will develop and improve their ability to communicate complex theories and physiological processes through both oral and written work.

SPMD 4510. Neurophysiology and Human Function
3 Credits (3)
Students will be introduced to a comprehensive study of the human nervous system. Fundamental structures of the central and peripheral nervous system will be discussed to understand the physiology of the brain and rest of the nervous system. This course will also enhance the understanding how sensory information reaches the brain and how information is processed, leading to effective action. In addition, students will be introduced to the basic concepts regarding neurodynamics, neurological mechanisms of pain, and pathophysiology of neurologic disorders/conditions, with emphasis placed on recognition, pathophysiologic signs/symptoms, assessment, and management of selected conditions.
Prerequisite: SPMD 2210 or BIOL 2210; SPMD 2210L or BIOL 2210L; SPMD 3410; and GPA of 2.75.
Learning Outcomes
1. Identify and describe the organization of the central and peripheral nervous systems, the structure and function of neurons and glia, and the anatomy of the brain and its internal and external structures.
2. Develop knowledge about the basic neurophysiological function of the central and peripheral nervous systems.
3. Describe the neurobiology and pathways of the special senses.
4. Identify and analyze major neurological disorders and mental health disorders and describe their clinical presentations.
5. Describe and understand the clinical examination process relevant to neurological injury, illness, and disease.

SPMD 4520. Adapted Physical Education
3 Credits (3)
Selection and scope of corrective activities in posture and body mechanics, and the adaptation of movement activities for the exceptional student.
Learning Outcomes
1. Students will learn to implement principles of inclusion into the practice of physical education.

SPMD 4530. Methods of Teaching Secondary Physical Education
6 Credits (6)
Theoretical and practical applications of curriculum, pedagogy and assessment for teaching secondary physical education. Provides the students opportunities to develop curriculum, teach, and assess student learning through a supervised practicum in both middle and high school physical education settings. Consent of Instructor required.
Prerequisite: SPMD 3160.
Learning Outcomes
1. Improve your knowledge of 6-12 physical education content, disciplinary concepts, and tools of inquiry related to the development of a physically educated person.
2. Improve your knowledge of and ability to plan instruction based on curriculum goals/objectives and students' experiences.
3. Improve your ability to design and teach developmentally appropriate 6-12 physical education curriculum for diverse learners.
4. Improve your knowledge of, or ability to, teach a variety of skills and concepts a Student-Centered Inquiry as Curriculum approach.
5. Improve your ability to teach using a variety of strategies such as cooperative learning, problem-based learning, direct instruction, divergent convergent discovery, that facilitate student learning across difference.
6. Improve your ability to plan effective units/lessons to insure equity and sensitivity to the needs of students with diverse characteristics: this includes a) critically analyzing content/curriculum in light of broad goals for education and b) structuring a safe, educational environment that facilitates learning for all students.
7. Improve your knowledge of and ability to help individuals work productively and cooperatively with others to produce quality work.
8. Improve your ability to create an equitable learning climate in which individual differences are respected and be able to model, teach, and integrate multicultural awareness, acceptance, and appreciation.
9. Improve your knowledge of and ability to incorporate inquiry, critical thinking, problem solving and creative exploration into your lessons. 1
10. Improve your knowledge of professional literature, research, organizations, and other technological resources for continuing professional development. 1
11. Improve your knowledge of and ability to use appropriate professional behavior. 1
12. Improve your ability to model appropriate verbal and written communications. 1
13. Improve your ability to encourage students to recognize, question, and interpret health related ideas from a variety of perspectives. 1
14. Improve your ability to reflect on your teaching in relation to sound educational philosophy, social, moral and other educational issues, theoretical knowledge, research, and your personal beliefs and values. 1
15. Improve your ability to design and implement formal and informal practical assessments with students as a way to check for student learning. 1
16. Use a variety of formal and informal assessment techniques to assess learner performance, provide feedback, and communicate learner progress.

SPMD 4540. Psychology of Coaching in Sport
3 Credits (3)
This course is designed to focus on major topics and theories dealing with the social-psychological factors affecting the performance of athletes and teams, with practical suggestions for enhancing the effectiveness of teachers and coaches. The course will also focus on team and group dynamics that influence physical performance.
Prerequisite: SPMD 3550 or SPMD 3610.
Learning Outcomes
1. Examine current literature and popular media to consider the influence of coaching behaviors on human performance in sport and non-sport activities.
2. Compare coaching from a psychological perspective to current understandings in motor learning.
3. Evaluate coaching behavior using evidence-based sources and measurement tools.
4. Develop a coaching portfolio for a sport program of choice.

SPMD 4550. Exploring Extreme Human Performance
3 Credits (3)
A reading, writing and documentary based course studying human's quest and the related sacrifices associated with participating in extreme performance activities such as the Olympics, wakeboarding, snowboarding, military special forces, ultra-run events, marathons, etc. Consent of Instructor required.
Prerequisite: Consent of instructor and GPA 2.75.

SPMD 4610. Research Seminar
3 Credits (3P)
Capstone course for Kinesiology/Pre-Health minors. Consent of Instructor required.

Prerequisite: GPA 2.75.

Learning Outcomes

1. The Student Learning Outcomes are dependent on instructor and specific direction of course with individual group of students, similar to an independent study/research/practicum experience

SPMD 4620. Nutrition and Metabolism of Sport

3 Credits (3)

This course addresses the aspects of nutrition that are related to exercise performance. Emphasis will be placed on the bioenergetics systems, the components of nutrition, nutritional and body composition assessments, ergogenic aids, and diet modifications for physically active individuals and athletes.

Prerequisite: SPMD 2210, SPMD 3410.

Learning Outcomes

1. Describe the metabolism of macronutrients and micronutrients.
2. Clarify the effects of high and low-carbohydrate diets on exercise performance.
3. Explain the potential athletic benefits of manipulating fat content in our diet.
4. Discuss increasing protein intake to promote exercise adaptations.
5. Explain specific physiological functions of micronutrients.
6. Specify fluid intake recommendations before, during, and after exercise.
7. Calculate macronutrient recommendations for endurance athletes, strength/power athletes, and team sport athletes.
8. Provide nutritional recommendations for special populations of athletes.
9. Recommend nutrition strategies related to weight management goals . 1
10. Discuss the benefits and challenges of unique body composition assessments. 1
11. Provide macronutrient recommendations within a periodized training program. 1
12. Compare and contrast the ergogenic benefits of popular dietary supplements.

SPMD 4805. Emergency Response

2 Credits (2)

Comprehensive approach to the identification of risk factors, preparation of emergency action plans, and recognition and care of emergency medical conditions including those that may lead to sudden death. This is a hybrid course combining online instructional components and clinical skills experience including clinical safety (blood-borne pathogens, ECC, first-aid, etc), and on-field emergency management. Consent of Instructor required.

Learning Outcomes

1. Identify the individuals involved in the Emergency Response Team
2. Construct the components of an effective Emergency Action Plan.
3. Assess the scene and patient during an emergency situation.
4. Demonstrate proper universal precautions and wound care.
5. Demonstrate effective Cardiopulmonary Resuscitation, AED use.
6. Demonstrate effective Rescue Breathing Airway Management techniques.
7. Demonstrate effective splinting techniques.
8. Demonstrate understanding of the techniques utilized in cervical stabilization
9. Identify components of acute care for general medical and orthopedic emergencies

SPMD 4997. Problems

1-3 Credits (1-3)

Independent study in either Kinesiology and/or Athletic Training May be repeated up to 9 credits.

Learning Outcomes

1. Varies

SPMD 4998. Internship

6 Credits (6P)

A part-time internship in an approved wellness, fitness, athletic, recreation, research lab or other program as agreed upon by the internship supervisor. The student will gain experience in all phases of management and operation. This is a 6-hour internship which can be repeated for an additional 6-credit hours at the same or a different location allowing the student to gain one or multiple field experiences. Field instructor supervision will oversee the students performance. This internship may require relocation to a site outside of the Las Cruces area.

Learning Outcomes

1. Students will apply their academic program didactic knowledge, skills and abilities at a professional site gaining hands-on learning experiences under the supervision of a practicing professional
2. Students will learn in a working environment such that the internship becomes the capstone of their undergraduate education allowing them practical experience in a career field of their choice.

SPMD 5005. Foundations of Athletic Training

3 Credits (3)

This course provides an introduction to clinical decision making and covers standard techniques and procedures for the evaluation and diagnosis of musculoskeletal injuries and common illnesses, injury prevention concepts, documentation and management. Consent of Instructor required.

Learning Outcomes

1. Demonstration of clinical decision making skills
2. Articulation of standard techniques and procedures for evaluation and diagnosis
3. Produce standardized documentation of clinical findings.

SPMD 5010. Clinical & Functional Anatomy in Athletic Training

3 Credits (3)

This course allows students to develop applied knowledge and hands-on skills for future athletic training practitioners. Emphasizes skills for identifying musculoskeletal structures visually and via palpation, and then assessing their function. Use of anatomical and live human models to develop and demonstrate skills. Acceptance into the MSAT program.

Learning Outcomes

1. Demonstrate knowledge of human musculoskeletal structures and function.
2. Identification of boney landmarks for assessment of musculoskeletal conditions.
3. Demonstrate appropriate palpation of muscles, bones and joints for musculoskeletal assessment.
4. Demonstrate knowledge of actions, origins, insertions and innervations of the major muscle groups of the human body.
5. Demonstrate appropriate techniques for assessment of functional movements.

SPMD 5015. Behavioral Health, Wellness, and Prevention
3 Credits (3)
Exploration of models of patient care delivery in athletic training, behavioral health, wellness and prevention principles as they apply to an athletic or physically active population.
Learning Outcomes
1. Identify, refer and give support to athletes/patients with behavioral health conditions.
2. Collaborate with other healthcare providers to provide appropriate interventions for behavioral health and overall wellness.
3. Develop and implement strategies to mitigate risks associated with long-term health conditions across the lifespan including patient education.
4. Demonstrate competent communication and patient education strategies within a variety of behavioral health and wellness scenarios.
5. Articulate the importance and key components of a mental health emergency action plan.
6. Explore and analyze the impact of group identification including the intersectionality of multiple identities on health disparities, patient care and patient outcomes.

SPMD 5020. Graduate Athletic Training Research I
1-3 Credits (1-3)
Advanced research topics in athletic training. Students will explore research and evidence based practices within the field of athletic training. Students will work under the direct supervision of a Commission on Accreditation of Athletic Training Education (CAATE) accredited Athletic Training Program faculty member. Students should be prepared to further explore research topics within a specific discipline with the intent of disseminating and sharing information with the athletic training community. topics previously covered in SPMD 5310 (Graduate Athletic Training Seminar I) Students may engage in teaching and research opportunities in unique areas May be repeated up to 3 credits.
Learning Outcomes
1. Demonstrate increased knowledge within the designated topic areas identified for the semester.
2. Demonstrate increased skill in assessing and conducting research for the athletic training community

SPMD 5025. Graduate Athletic Training I
1-3 Credits (1-3)
Advanced clinical experiences and education in athletic training. Students will examine topics in athletic training in conjunction with faculty members within the Commission on the Accreditation of Athletic Training Education (CAATE) Athletic Training Program at New Mexico State University . Assessment of Athletic Training Program clinical proficiencies as described by the National Athletic Trainers' Association Education Council. May be repeated up to 3 credits.
Learning Outcomes
1. Demonstrate increased knowledge within the designated topic areas identified for the semester.
2. Demonstrate increased skill in teaching or academic preparation techniques as identified for the semester.

SPMD 5030. Graduate Athletic Training II
3 Credits (3)
Advanced clinical experiences and education in athletic training. Assessment of Athletic Training Program clinical proficiencies as described by the National Athletic Trainers' Association Education Council. May be repeated up to 3 credits.
Learning Outcomes
1. Demonstrate increased knowledge within the designated topic areas identified for the semester.
2. Demonstrate increased skill in teaching or academic preparation techniques as identified for the semester.

SPMD 5050. Clinical Education I
3 Credits (3)
Integration of clinical competencies with classroom instruction and a supervised field based experience in athletic training to link theory into practice. Consent of Instructor required.
Learning Outcomes
1. Demonstrate basic evaluation, taping, bracing and emergency care skills.
2. Select and properly fit protective equipment for a variety of injury and sport scenarios.
3. Demonstrate proper equipment removal for emergency care of the injured athlete.
4. Perform a pre-participation examination including physical evaluation, documentation and referral if needed.

SPMD 5120. Lower Extremity Injury Evaluation + Lab
4 Credits (4)
This course provides a comprehensive approach to the pathomechanics, clinical examination, diagnosis, role of clinical outcome measures and appropriate medical referral and treatment of orthopedic injuries and other conditions to the lower extremity. Consent of Instructor required.
Learning Outcomes
1. Demonstrate knowledge and ability to apply current best practices in acute care, diagnosis and treatment of injuries involving the lower extremity
2. Demonstrate strong clinical examination skills in order to accurately diagnose and effectively treat the patient.
3. Demonstrate the knowledge and skills necessary to evaluate and provide immediate management of acute injuries.
4. Determine and apply therapeutic interventions designed to maximize the patient's participation and health-related quality of life.
5. Develop and implement strategies and programs to prevent the incidence and/or severity of injuries.

SPMD 5150. Clinical Education II
3 Credits (3)
Integration of clinical competencies with classroom instruction and a supervised field based experience in athletic training to link theory into practice.
Prerequisite: SPMD 5050.
Learning Outcomes
1. Students will become effective practitioners in the field of Athletic Training and Sports Medicine by utilizing critical thinking strategies based in evidence based practice theories combined with pedagogical knowledge of the concepts in Athletic Training.
2. Students will utilize their clinical experience and knowledge of injury evaluation to enhance their athletic training skills working with an athletic population under the supervision of a preceptor.

SPMD 5180. Therapeutic Interventions I
4 Credits (3+1P)
Stud of physical rehabilitation theory and techniques used as therapeutic intervention for orthopedic injuries and conditions.

Learning Outcomes

1. Demonstrate appropriate application techniques for therapeutic modalities to include thermal, electrical, ultrasound and mechanical therapeutic modalities.
2. Demonstrate proper clinical assessment techniques to establish treatment and rehabilitation plans for a variety of orthopedic injuries and conditions including proper documentation procedures.
3. Demonstrate knowledge of the physiological and pathological processes of trauma, wound healing and tissue repair and their role/implications within the therapeutic intervention process.

SPMD 5205. Evidence Based Practice
2 Credits (2)
This course investigates the concepts of evidence based practice as it relates to musculoskeletal assessment, diagnosis and therapeutic interventions with a primary focus on clinician- and patient-oriented outcome measures and appropriate referral decisions. Students will explore primary literature focused on clinical questions related to a comprehensive approach to injury evaluation.
Learning Outcomes

1. Define evidence-based practice as it relates to athletic training clinical practice.
2. Explain the role of evidence in the clinical decision-making process.
3. Describe and differentiate the types of quantitative and qualitative research, research components, and levels of research evidence.
4. Describe a systematic approach (eg, five step approach) to create and answer a clinical question through review and application of existing research.
5. Develop a relevant clinical question using a pre-defined question format (eg, PICO= Patients, Intervention, Comparison, Outcomes; PIO = Patients, Intervention, Outcomes).

SPMD 5220. Upper Extremity Injury Evaluation + Lab
4 Credits (3+1P)
This course provides a comprehensive approach to the pathomechanics, clinical examination, diagnosis, role of clinical outcome measures and appropriate medical referral and treatment of orthopedic injuries and other conditions to the upper extremity. Consent of Instructor required.
Learning Outcomes

1. Demonstrate knowledge and ability to apply current best practices in acute care, diagnosis and treatment of injuries involving the upper extremity
2. Demonstrate strong clinical examination skills in order to accurately diagnose and effectively treat the patient.
3. Demonstrate the knowledge and skills necessary to evaluate and provide immediate management of acute injuries.
4. Determine a therapeutic intervention designed to maximize the patient's participation and health-related quality of life.
5. Develop and implement strategies and programs to prevent the incidence and/or severity of injuries and optimize their patient's overall health and quality of life.

SPMD 5250. Immersive Clinical Experience
3 Credits (3P)
Integration of clinical competencies during an immersive, supervised, field based experience in athletic training to link theory into practice. May be repeated up to 6 credits.
Prerequisite: SPMD 5150.

Learning Outcomes

1. Students will be proficient in the day to day operations of an athletic training room.
2. This immersive experience will prepare students for future employment as a full-time athletic trainers.
3. Students will demonstrate skills in all aspects of athletic training including patient-centered care, clinical examination, diagnosis and intervention, prevention, health promotion and wellness and healthcare administration.

SPMD 5280. Therapeutic Interventions II
4 Credits (3+1P)
A detailed study of the physiological effects, indications, contraindication, dosage, and maintenance of modern therapeutic devices related to the treatment and rehabilitation of orthopedic injuries and conditions.
Prerequisite: SPMD 5180.
Learning Outcomes

1. Demonstrate proper clinical assessment techniques to establish treatment and rehabilitation plans for a variety of orthopedic injuries and conditions including proper documentation procedures.
2. Demonstrate knowledge of the physiological and pathological processes of trauma, wound healing and tissue repair and their role/implications within the therapeutic intervention process.
3. Design treatment plans based upon sound clinical assessment and appropriate selection of modalities that address the physiological and psychological needs of the patient.
4. Demonstrate competence with the collection and analysis of baseline and post-treatment data to evaluate and interpret treatment outcomes based upon principles of evidence-based practice.
5. Demonstrate competence with the application of a wide variety of modalities including patient preparation, modality application and modification based upon clinical findings using principles of evidence based practice.

SPMD 5310. Inferential Statistics in Sports and Exercise Science
3 Credits (3)
This course serves to provide an introduction to statistical analyses. The conceptual framework of the course will allow for the application of a variety of statistical concepts in order to better understand the nature of data associated with scientific literature publications. Consent of Instructor required for registration.
Learning Outcomes

1. Exhibit an understanding of basic statistical concepts and techniques that are consistent with contemporary and valid research in the field of exercise science.
2. Effectively organize data and accurately calculate appropriate statistics for specific research applications.
3. Exhibit an understanding of specific factors that affect validity, reliability and subjectivity of various data gathering techniques.
4. Exhibit knowledge of how to analyze and interpret data using current appropriate technology (SPSS).
5. Interpret performance and fitness data in order to make appropriate and relevant conclusions.
6. Select an appropriate statistical test upon being presented with a data set, interpret the statistical test, and present the results in APA format.

SPMD 5350. Principles of Strength and Conditioning
3 Credits (3)

Application of research, theory, and methods of high-intensity, resistance training. Performance-specific topics include management, nutrition, exercise prescription, periodization, lifting techniques, testing, and evaluation. Course will emphasize standards set forth by the National Strength and Conditioning Association preparing students interested in sitting for the NSCA certification examinations. Consent of Instructor

Learning Outcomes

1. Understanding of general physiology and its responses to acute and chronic exercise
2. Understanding of cardiovascular effects of exercise, training and sport
3. Understanding of strength training affects on special populations such as youth, women and the elderly
4. Understanding of musculoskeletal changes from exercise, training and sport
5. Practicality and application of power and strength training
6. Comprehension of training programs and how they pertain to different training aspects
7. Demonstrate principles of plyometrics and training
8. Understand and demonstrate principles of periodization

SPMD 5370. Research Methods in Kinesiology
3 Credits (3)

This course will provide students with graduate-level understanding of research methods. Specifically, the course is designed to prepare students to critically read, understand, and evaluate research; retrieve scholarly articles; and develop research-related skills for further graduate education and professional work. Students will be trained to become scientific thinkers rather than anecdotal thinkers.

Learning Outcomes

1. Be able to accurately identify a research problem.
2. Conduct a literature search and summarize literature to develop a research problem.
3. Develop a hypothesis and research statement appropriate to their specific research interests.
4. Determine an appropriate study design/method to test the hypothesis.
5. Demonstrate understanding of measurement concepts such as validity, reliability, scales of measurement, field tests, and laboratory tests.
6. Interpret statistical analyses, tables, and summaries presented in research.
7. Understand research ethics.
8. Use written and verbal forms for reporting research.

SPMD 5410. Biomechanics
3 Credits (3)

The application biomechanical analysis of human movement as it relates to human performance through the use of anatomical, mechanical and electrical concepts. Consent of Instructor

Learning Outcomes

1. The student will be able to competently assess physical anatomy, analyze linear and angular forces, examine gait, understand the relationships between kinetics and kinematics, understand how muscle and bone architecture impact human movement, and be familiar with the utilization of various data collection methods used in evaluating and improving human movement.

SPMD 5450. Exercise for Special Populations
3 Credits (3)

Fundamentals of kinesiology adapted for adults with various diseases and disabilities. Focus will be on the application of exercise assessment and prescription for selected conditions. Consent of Instructor

Learning Outcomes

1. To develop an understanding of the pathophysiology of various cardiovascular, pulmonary, metabolic, skeletal muscle, orthopedic, and mental diseases.
2. To provide a medical perspective in the treatment and management of individuals with these conditions in which exercise therapy may be beneficial.
3. To provide a sound understanding of exercise testing and prescription for a variety of chronic disease states.
4. To be able to assess, interpret, and evaluate case studies of diseased individuals and to develop comprehensive rehabilitation programs based on this information.
5. To develop the ability to articulate / present information of various diseases / conditions in a professional manner both formally and in a one on one setting.

SPMD 5510. Psychology of Sport
3 Credits (3)

Development of coaching techniques to enhance sport performance based on understanding and use of psychological principles. Consent of Instructor

Learning Outcomes

1. Identify psychological characteristics associated with peak performance
2. Describe and explain factors practitioners should consider when diagnosing, designing, and implementing a mental training intervention.
3. Recognize and define the psychological constructs of –for example but not limited to—concentration, confidence, motivation, stress/anxiety, and arousal.
4. Understand how personality attributes and the environment affect human performance and injury rehabilitation.

SPMD 5550. Skill Acquisition and Performance
3 Credits (3)

Behavioral and physiological examination factors that influence the acquisition and performance of motor skills. Consent of Instructor

Learning Outcomes

1. Describe and explain the principles and processes underlying skilled performance
2. Know the factors to consider when diagnosing, designing, and assessing learning experiences
3. Understand the elements of an effective instructional plan for skill acquisition

SPMD 5575. Advanced Motor Development
3 Credits (3)

Advanced coverage of motor development topics including: Theoretical perspectives of motor development; the sequential, age-related, continuous process of physical growth and maturation; changes in movement behavior from infancy to older adulthood; external influences on development of motor skills; research approaches in motor development. Consent of Instructor

Learning Outcomes

1. Describe the historical progression of motor development within the broader field of kinesiology

2. Explain the various theories and foundational concepts of motor development
3. Understand and apply the processes (social, cognitive, perceptual) involved in motor skill development throughout the lifespan (infancy, childhood, adolescence, adulthood)
4. Identify procedures and methodologies used to assess various aspects of motor development
5. Interpret the supporting literature and research related to the fundamental principles of motor development
6. Apply and transfer the knowledge gained to develop a research proposal to enhance understanding of a motor development topic of interest

SPMD 6005. Athletic Training Research I
2 Credits (2)
Instruction and development of research skills through the study of published reports and readings in athletic training and related fields. Consent of Instructor required.
Learning Outcomes
1. Describe a systematic approach (eg, five step approach) to create and answer a clinical question through review and application of existing research.
2. Develop skill in utilizing multiple scales for critical appraisal of literature and research studies.
3. Develop a relevant clinical question utilizing a predefined question format and conduct a literature review on the subject.
4. Describe multiple forms of research, research and literature resources and the differences between narrative reviews, systematic reviews and meta analyses.
5. Describe and apply concepts of diagnostic accuracy and clinical prediction rules as they pertain to patient centered care and evidence based practice.

SPMD 6010. Organization and Administration in Athletic Training
3 Credits (3)
Organization and administration of athletic training services including management, leadership, financial, human resources, facility, information technology and risk management.
Learning Outcomes
1. Students will employ values consistent with the NATA code of ethics for all health care administration actions.
2. Demonstrate knowledge of legal, ethical and risk management concepts in athletic training and health care administration.
3. Demonstrate mastery of a variety of health care management concepts.
4. Demonstrate comprehension of fiscal management strategies, resource management and facility design as it relates to athletic training.

SPMD 6020. Evaluation of the Head, Neck, Spine and Torso
3 Credits (3)
This course provides a comprehensive approach to the pathomechanics, clinical examination, diagnosis, role of clinical outcome measures and appropriate medical referral and treatment of orthopedic injuries and other conditions to the head, neck and spine.
Prerequisite: SPMD 5220.
Learning Outcomes
1. Demonstrate knowledge and ability to apply current best practices in acute care, diagnosis and treatment of injuries involving the head, neck, spine and torso.
2. Demonstrate strong clinical examination skills in order to accurately diagnose and effectively treat the patient.
3. Demonstrate the knowledge and skills necessary to evaluate and provide immediate management of acute injuries and illnesses.
4. Determine a therapeutic intervention designed to maximize the patient's participation and health-related quality of life.
5. Develop and implement strategies and programs to prevent the incidence and/or severity of injuries and optimize their patients' overall health and quality of life.

SPMD 6050. Clinical Education III
3 Credits (3)
Integration of clinical competencies with classroom instruction and a supervised field based experience in athletic training to link theory into practice.
Prerequisite: SPMD 5150.
Learning Outcomes
1. Students will become effective practitioners in the field of Athletic Training and Sports Medicine by utilizing critical thinking strategies based in evidence based practice theories combined with pedagogical knowledge of the concepts in Athletic Training.
2. Students will utilize their clinical experience and knowledge of injury evaluation to enhance their athletic training skills working with an athletic population under the supervision of a preceptor.

SPMD 6110. Professional Preparation
3 Credits (3)
Knowledge and skills for successful pursuit of athletic training credentials, employment and continuing professional competency; emphasis on current topics and issues contributing to the professional preparation of athletic training. Student must be enrolled in their final semester of the MSAT program to enroll in this course.
Learning Outcomes
1. Students will create a profile with the Board of Certification (BOC) in preparation for their BOC Examination
2. Students will analyze their individual strengths and weaknesses through practice examinations in order to prepare for a successful challenge of the BOC Examination
3. Students will demonstrate knowledge of basic human resources policies and procedures and the hiring process for athletic trainers.
4. Students will self-assess professional competence and create professional development plans according to personal and professional goals and requirements

SPMD 6150. Clinical Education IV
3 Credits (3)
Integration of clinical competencies with classroom instruction and a supervised field based experience in athletic training to link theory into practice.
Prerequisite: SPMD 6050.
Learning Outcomes
1. Students will become effective practitioners in the field of Athletic Training and Sports Medicine by utilizing critical thinking strategies based in evidence based practice theories combined with pedagogical knowledge of the concepts in Athletic Training.
2. Students will utilize their clinical experience and knowledge of injury evaluation to enhance their athletic training skills working with an athletic population under the supervision of a preceptor.
3. Students will demonstrate professional behaviors congruent with the ethical standards of the profession of athletic training.

4. Students will develop, implement, and revise policies that pertain to prevention, preparedness, and response to medical emergencies and other critical incidents.

SPMD 6280. General Medical Conditions & Therapeutic Medications
4 Credits (3+1P)
Pathophysiology, assessment, and appropriate intervention and referral for general medical conditions and disabilities; common diagnostic tests and imaging assessment tools; commonly used therapeutic medications. **Prerequisite:** SPMD 5280.
Learning Outcomes
1. Recognition of general medical conditions including emergent physical and psychological conditions for intervention, referral or return to play criteria as appropriate.
2. Demonstrate proper clinical examination techniques for the assessment of general medical conditions including signs and symptoms of catastrophic and emergent conditions.
3. Demonstrate knowledge of common therapeutic medications and the general medical conditions they treat within the fields of athletic training and sports medicine.
4. Demonstrate knowledge of the principles of pharmacology, including pharmacokinetics and pharmacodynamics, as they relate to the fields of athletic training and sports medicine.
5. Demonstrate knowledge of federal, state and local laws, regulations and procedures for proper storage, disposal, transportation, dispensing and documentation dealing with prescription and non-prescription medications.

SPMD 6310. The Social Construction of the Body
3 Credits (3)
This course will explore how people's health and physical activity experiences and choices are often shaped by cultural narratives and expectations of the male and female body. Designed for graduate students in allied health and physical activity professions

SPMD 6350. Advanced Exercise Physiology
3 Credits (3)
Detailed study of the integrated response of neuromuscular, cardiovascular and respiratory systems to acute and chronic exercise, nutrition and environmental conditions with a strong emphasis on laboratory experience. Consent of Instructor
Learning Outcomes
1. Fundamental concepts about nutrition and it application to human performance
2. Advanced understanding of nutrition and its association with human bioenergetics
3. Human bioenergetics and its responsibility for performance enhancement and outcomes
4. Energy transfer and expenditure under various physical and environmental conditions
5. Pulmonary and cardiovascular responses to exercise
6. Cardiovascular and cellular adaptations to altitude

SPMD 6410. Cardiovascular Physiology
3 Credits (3)
This graduate level course provides an in-depth study of cardiovascular structure and function. The course assumes that students have a strong background in human physiology. Topics include, but are not limited to: cellular structure of the heart and vascular system; cardiac function, including electrophysiology of the heart; vascular function; neurohumoral control of the heart and circulation, organ blood flow, exchange function of the microcirculation; the impact of common cardiovascular diseases on cardiovascular structure and function, and cardiovascular adaptations to chronic exercise. Consent of Instructor
Learning Outcomes
1. The student will demonstrate a comprehensive knowledge cardiovascular structure and function
2. The student will be able to relate common cardiovascular pathophysiology to cardiovascular functional impairments and physical functional limitations.
3. The student will be able to discuss chronic exercise training adaptations on the cardiovascular system and their value as a treatment strategy for cardiovascular diseases.

SPMD 6450. Skeletal Muscle: Structure and Function
3 Credits (3)
Basic muscle morphology and physiology with molecular and cellular adaptations in skeletal muscle as consequences to varying exercise regimens. Consent of Instructor
Learning Outcomes
1. To gain knowledge of the structure and function of skeletal muscle
2. To gain knowledge related to the skeletal muscle in reference to cellular and molecular responses and adaptions to exercise
3. To understand laboratory procedures used to study muscle metabolism
4. To develop ability to scientifically critique published papers and present them in a professional manner

SPMD 6510. Designing Resistance Training Program
3 Credits (3)
Detailed study of the physiological concepts associated with designing resistance-training programs for children, women, seniors, athletic performance and rehabilitation. Consent of Instructor
Learning Outcomes
1. Fundamental components associated with resistance training and exercise prescription
2. Compare and contrast isometric, dynamic, variable, isokinetic, eccentric, concentric resistance training
3. Design programs guided by a needs analysis
4. Demonstrate appropriate techniques and implement systems for training
5. Study physiological adaptations of resistance training for women, children, seniors, athletics and rehabilitation
6. Understand anatomical and physiological changes associated with detraining
7. Integrate components and concepts of resistance training for program design (periodization)
8. Explore alternative training programs

SPMD 6710. Project
1-12 Credits (1-12)
Selected projects for doctoral students. May be repeated up to 12 credits.
Learning Outcomes
1. Students will develop research skills through the work on projects with faculty members.

SPMD 6750. Kinesiology Research
1-3 Credits (1-3)
Research to be conducted under the direction of a Kinesiology faculty member May be repeated up to 15 credits.

SPMD 6996. Special Topics
1-3 Credits (1-3)
Offered under various subtitles that indicate the subject matter. May be repeated up to 9 credits.
Learning Outcomes
1. Varies

SPMD 6999. Capstone Project
1,3 Credits (1,3)
Students will prepare an individualized capstone project and prepare for the board exams.
Prerequisite: SPMD 5205.
Learning Outcomes
1. Utilize evidence-based research and data from the field of athletic training to create a scholarly capstone project.
2. Disseminate communicate project findings to appropriate stakeholders by various presentation methods.
3. Advocate for the profession of athletic training via the capstone project.

SPMD 7000. Doctoral Dissertation
1-18 Credits (1-18)
Doctoral Dissertation hours to be conducted under the direction of a Kinesiology Faculty. May be repeated up to 18 credits.
Learning Outcomes
1. Varies