KINE 4322 – Rehabilitation of Athletic Injury

Course Description
KINE 4322 provides the student with general knowledge of rehabilitation for athletic injuries including goniometry, muscle testing, therapeutic exercises, and the use of SOAP notes. Prerequisite: KINE 2325 or KINE 3318 or BIOL 2401.

Learning Objectives
This course is designed to enable students to:

- Design and deliver the rehabilitative programs for athletic injuries.
- Express the philosophy of rehabilitative process in a sports medicine environment.
- Realize the importance of understanding the healing process, biomechanics, and psychological aspects of a rehabilitation program.
- Understand the physiological process of healing for a variety of tissue types.
- Explain the role of systematic injury evaluation process in establishing a rehabilitation plan and treatment.
- Understand the concept of using psychological buffers for stress management.
- Explain progressive psychological reactions to injury, dependent on the length of rehabilitation.
- Understand coping skills necessary for successful rehabilitation.
- Understanding the physiology and importance of reestablishing each of the following components during rehabilitation.
  a. Neuromuscular control
  b. Range of motion and flexibility
  c. Muscular strength, power, and endurance
  d. Postural stability and balance
  e. Cardiorespiratory fitness
- Understand the procedure and demonstrate the use of the following rehabilitation tools.
  f. Core stability
  g. Plyometrics
  h. Open vs closed kinetic chain exercise
  i. Isokinetics
  j. Joint mobilization and traction
  k. PNF and other soft tissue mobilization
  l. Aquatic therapy
  m. Functional progressions and functional testing
- Understand general rehabilitation/medical terminology and the importance of documentation (SOAP notes).
• Develop a general rehabilitation protocol based on the type and severity of injury as well as the physiology of healing.

**Major Course Requirements**
Each student’s final grade will be determined from the performance on exams, quizzes, and assignments. There are also points awarded for participation, which may be adversely affected by poor attendance.

<table>
<thead>
<tr>
<th>Written Exams (2) = 100pts/apiece</th>
<th>Grading Scale</th>
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<tbody>
<tr>
<td>Final Exam = 150pts</td>
<td>90.00-100% = A</td>
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<tr>
<td>Quizzes (~10) = 10-15pts/apiece</td>
<td>80.00-89.99% = B</td>
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<tr>
<td>Project (1) = 100 pts</td>
<td>70.00-79.99% = C</td>
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<tr>
<td>Class Participation = 30pts</td>
<td>60.00-69.99% = D</td>
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<tr>
<td><strong>Total = ~650 pts</strong></td>
<td>&lt; 60.00% = F</td>
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**Required or Recommended Readings**

**Textbook:**

**Recommended or Supplemental Reading:**
N/A

**State Adopted Proficiencies/TExES Competencies**

1. **LEARNER-CENTERED KNOWLEDGE:** The teacher possesses and draws on a rich knowledge base of content, pedagogy, and technology to provide relevant and meaningful learning experiences for all students.

2. **LEARNER-CENTERED INSTRUCTION:** To create a learner-centered community, the teacher collaboratively identifies needs; and plans, implements, and assesses instruction using technology and other resources.

3. **EQUITY IN EXCELLENCE FOR ALL LEARNERS:** The teacher responds appropriately to diverse groups of learners.

4. **LEARNER-CENTERED COMMUNICATION:** While acting as an advocate for all students and the school, the teacher demonstrates effective professional and interpersonal communication skills.

5. **LEARNER-CENTERED PROFESSIONAL DEVELOPMENT:** The teacher, as a reflective practitioner dedicated to all students’ success, demonstrates a commitment to learn, to improve the profession, and to maintain ethics and personal integrity.

**Texas A&M University-Corpus Christi - Athletic Training Program**

**Athletic Training Education Competencies (CAATE 5th Ed.)**

**Evidence-Based Practice (EBP)**

**EBP-1.** Define evidence-based practice as it relates to athletic training clinical practice.

**EBP-2.** Explain the role of evidence in the clinical decision making process.

**EBP-3.** Describe and differentiate the types of quantitative and qualitative research, research components, and levels of research evidence.

**EBP-4.** Describe a systematic approach (eg, five step approach) to create and answer a clinical question through review and application of existing research.

**EBP-5.** Develop a relevant clinical question using a pre-defined question format (eg, PICO= Patients, Intervention, Comparison, Outcomes; PIO = Patients, Intervention, Outcomes).

**EBP-6.** Describe and contract research and literature resources including databases and online critical appraisal libraries that can be used for conducting clinically-relevant searches.
EBP-7. Conduct a literature search using a clinical question relevant to athletic training practice using search techniques (eg, Boolean search, Medical Subject Headings) and resources appropriate for a specific clinical question.

EBP-8. Describe the differences between narrative reviews, systematic reviews, and metaanalyses.

EBP-9. Use standard criteria or developed scales (eg, Physiotherapy Evidence Database Scale [PEDro], Oxford Centre for Evidence Based Medicine Scale) to critically appraise the structure, rigor, and overall quality of research studies.

EBP-10. Determine the effectiveness and efficacy of an athletic training intervention utilizing evidence-based practice concepts.

EBP-11. Explain the theoretical foundation of clinical outcomes assessment (eg, disablement, health-related quality of life) and describe common methods of outcomes assessment in athletic training clinical practice (generic, disease-specific, region-specific, and dimension-specific outcomes instruments).

EBP-12. Describe the types of outcomes measures for clinical practice (patient-based and clinician-based) as well as types of evidence that are gathered through outcomes assessment (patient-oriented evidence versus disease-oriented evidence).

EBP-13. Understand the methods of assessing patient status and progress (eg, global rating of change, minimal clinically important difference, minimal detectable difference) with clinical outcomes assessments.

EBP-14. Apply and interpret clinical outcomes to assess patient status, progress, and change using psychometrically sound outcome instruments.

Clinical Examination and Diagnosis (CE)

CE-7. Identify the patient’s participation restrictions (disabilities) and activity limitations (functional limitations) to determine the impact of the condition on the patient’s life.

CE-8. Explain the role and importance of functional outcome measures in clinical practice and patient health-related quality of life.

Acute Care of Injuries and Illnesses (AC)

AC-43. Instruct the patient in home care and self-treatment plans for acute conditions.

Therapeutic Interventions (TI)

TI-1. Describe and differentiate the physiological and pathophysiological responses to inflammatory and non-inflammatory conditions and the influence of these responses on the design, implementation, and progression of a therapeutic intervention.

TI-2. Compare and contrast contemporary theories of pain perception and pain modulation.

TI-3. Differentiate between palliative and primary pain-control interventions.

TI-4. Analyze the impact of immobilization, inactivity, and mobilization on the body systems (eg, cardiovascular, pulmonary, musculoskeletal) and injury response.

TI-5. Compare and contrast the variations in the physiological response to injury and healing across the lifespan.

TI-6. Describe common surgical techniques, including interpretation of operative reports, and any resulting precautions, contraindications, and comorbidities that impact the selection and progression of a therapeutic intervention program.

TI-7. Identify patient- and clinician-oriented outcomes measures commonly used to recommend activity level, make return to play decisions, and maximize patient outcomes and progress in the treatment plan.

TI-8. Explain the theory and principles relating to expected physiological response(s) during and following therapeutic interventions.

TI-11. Design therapeutic interventions to meet specified treatment goals.

TI-11a. Assess the patient to identify indications, contraindications, and precautions applicable to the intended intervention.

TI-11b. Position and prepare the patient for various therapeutic interventions.

TI-11c. Describe the expected effects and potential adverse reactions to the patient.

TI-11d. Instruct the patient how to correctly perform rehabilitative exercises.

TI-11e. Apply the intervention, using parameters appropriate to the intended outcome.

TI-11f. Reassess the patient to determine the immediate impact of the intervention.

TI-12. Use the results of on-going clinical examinations to determine when a therapeutic intervention should be progressed, regressed or discontinued.

TI-15. Perform joint mobilization techniques as indicated by examination findings.

TI-16. Fabricate and apply taping, wrapping, supportive, and protective devices to facilitate return to function.
TI-17. Analyze gait and select appropriate instruction and correction strategies to facilitate safe progression to functional gait pattern.

TI-18. Explain the relationship between posture, biomechanics, and ergodynamics and the need to address these components in a therapeutic intervention.

TI-19. Identify manufacturer, institutional, state, and/or federal standards that influence approval, operation, inspection, maintenance and safe application of therapeutic modalities and rehabilitation equipment.

TI-20. Inspect therapeutic equipment and the treatment environment for potential safety hazards.

**Psychosocial Strategies and Referral (PS)**

PS-1. Describe the basic principles of personality traits, trait anxiety, locus of control, intrinsic and extrinsic motivation, and patient and social environment interactions as they affect patient interactions.

PS-2. Explain the theoretical background of psychological and emotional responses to injury and forced inactivity (eg, cognitive appraisal model, stress response model).

PS-3. Describe how psychosocial considerations affect clinical decision-making related to return to activity or participation (eg, motivation, confidence).

PS-4. Summarize and demonstrate the basic processes of effective interpersonal and cross-cultural communication as it relates to interactions with patients and others involved in the healthcare of the patient.

PS-5. Summarize contemporary theory regarding educating patients of all ages and cultural backgrounds to effect behavioral change.

PS-6. Explain the importance of educating patients, parents/guardians, and others regarding the condition in order to enhance the psychological and emotional well-being of the patient.

PS-7. Describe the psychological techniques (eg, goal setting, imagery, positive self-talk, relaxation/anxiety reduction) that the athletic trainer can use to motivate the patient during injury rehabilitation and return to activity processes.

PS-8. Describe psychological interventions (eg, goal setting, motivational techniques) that are used to facilitate a patient’s physical, psychological, and return to activity needs.

PS-9. Describe the psychosocial factors that affect persistent pain sensation and perception (eg, emotional state, locus of control, psychodynamic issues, sociocultural factors, personal values and beliefs) and identify multidisciplinary approaches for assisting patients with persistent pain.

PS-10. Explain the impact of sociocultural issues that influence the nature and quality of healthcare received (eg, cultural competence, access to appropriate healthcare providers, uninsured/underinsured patients, insurance) and formulate and implement strategies to maximize client/patient outcomes.

**Class Policies**

**Written Exams & Final Exam**

Two written exams will be given at the conclusion of their respective section. Material covered on the exam will mainly be from class lectures & notes as well as the textbook. There will also be material included on the exams from the lectures that don’t correspond with a chapter in the book. The **cumulative Final exam** will include test questions from the previous exams as well as a portion of questions over new information covered since the 2nd exam.

**Quizzes**

Quizzes will be either announced or unannounced, given at the beginning of the class. If you are absent and unexcused, missing a quiz will result in zero points and you will not be able to re-take the quiz.

**Assignments**

Examples are: handouts of anatomy, critiques of journal articles, outlines of chapters, or in-class activities, etc.

**Attendance & Tardiness**

Attendance will be checked daily, and **two (2) tardinesses will be counted as one (1) absence**. You are expected to be present each time the class meets; however, I will allow for two unexcused absences in a semester. It’s to your benefit to attend class and participate daily as this course is extremely challenging. There will be a performance assessment (30 points) of your class participation. To receive all 30 points you must be present and participate in ALL class discussions and laboratory activities. Your **3rd unexcused absence and every absence thereafter will result in the reduction of 5 points**.

An unexcused absence is any absence that is not an emergency or not due to a university related
function/event in which you are required to participate. An emergency constitutes you going to the ER and bringing me a note from the ER doctor. A university event would be an athlete traveling with their team, traveling to represent the university, and similar situations. If you know you will miss a day of class for a university event you MUST communicate this with me beforehand or else you will not be able to make up the points from that day AND it will be counted as an unexcused absence. If you have a situation occur out of your control that you feel is an emergency then let me know ASAP and I will handle these situations with discretion. Obviously, communication is of most importance in all of these situations. You should call me or email me to inform me if you will not be able to attend a class in the future.

Late work /Make-up Exams
If you miss the deadline for an assignment, you can still choose to turn it in for partial credit. If you missed the due time (i.e. during class) but still turned it in on the same day, there will be 10% deduction; 20% deduction for turning it in on the next day, 40% the day after, and it increases until it reaches 100% (no credit) on the 5 days after the due date. No make-up exams will be given except under extreme circumstances. If you are late to an exam or quiz you will not be given extra time to take it.

Extra Credit
Although extra credit will NOT be given upon personal request, it will be included at the end of the quiz and exam. There might be occasional extra credit assignments or attendance announced by the instructor throughout the semester.

Cell Phone/Electronic Device Usage
The use of such devices is prohibited during the class other than the class purposes (i.e. viewing PowerPoints, taking notes). During an exam or quiz you may not touch your cell phone or any other electronic device. If you do, you will be asked to leave and will receive zero points for that quiz/exam. In addition, upon taking a quiz/exam, all bags, hats, etc. must be kept under your desk. Not adhering to these rules will be considered an attempt to cheat and will also result in zero points.

Academic Integrity/Plagiarism
University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) Disciplinary action for academic misconduct is the responsibility of the faculty member assigned to the course. The faculty member is charged with assessing the gravity of any case of academic dishonesty, and with giving sanction to any student involved. Penalties that may be applied to individual cases of academic dishonesty include one or more of the following:
1. Written reprimand.
2. Requirement to re-do work in question.
3. Requirement to submit additional work.
4. Lowering of grade on work in question;
5. Assigning grade of 'F' to work in question;
6. Assigning grade of 'F' for course;
7. Recommendation for more severe punishment, such as dismissal from the program or from the University.
See the University Catalog for more information.

Dropping a Class
I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with your academic advisor, the
Financial Aid Office, and me, before you decide to drop this course. Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. April 6, 2018 is the last day to drop a class with an automatic grade of “W” this term.

Preferred methods of scholarly citations
Whenever citation is required, it must be done in the APA format.

Classroom/Professional Behavior
Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

Statement of Civility
Texas A&M University-Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with a high quality educational experience that is free from repression. You are responsible for following the rules of the University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

Grade Appeals
As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules Web site at http://www.tamucc.edu/provost/university_rules/index.html. For assistance and/or guidance in the grade appeal process, students may contact the Dean’s office in the college in which the course is taught or the Office of the Provost.

Disabilities Accommodations
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please call or visit Disability Services at (361) 825-5816 in Corpus Christi Hall 116.

If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.

Statement of Academic Continuity
In the event of an unforeseen adverse event, such as a major hurricane and classes could not be held on the campus of Texas A&M University–Corpus Christi; this course would continue through the use of Blackboard and/or email. In addition, the syllabus and class activities may be modified to allow continuation of the course. Ideally, University facilities (i.e., emails, web sites, and Blackboard) will be operational within two days of the closing of the physical campus. However, students need to make certain that the course instructor has a primary and a secondary means of contacting each student.

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<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Associated Reading</th>
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<tbody>
<tr>
<td>16-Jan</td>
<td>Introduction – Essential Considerations</td>
<td>Ch. 1</td>
</tr>
<tr>
<td>18-Jan</td>
<td>Essential Considerations and Eval Process in Rehab</td>
<td>Ch. 1,3</td>
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<tr>
<td>23-Jan</td>
<td>EBP in Rehab and Disablement Model</td>
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<tr>
<td>25-Jan</td>
<td>Psychological Considerations</td>
<td>Ch. 4</td>
</tr>
<tr>
<td>30-Jan</td>
<td>Tissue Process</td>
<td>Ch. 2</td>
</tr>
<tr>
<td>1-Feb</td>
<td>Tissue Process</td>
<td>Ch. 2</td>
</tr>
<tr>
<td>6-Feb</td>
<td>Restoring ROM, Flexibility</td>
<td>Ch. 8</td>
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<tr>
<td>8-Feb</td>
<td>Restoring ROM, Flexibility, Joint Mobs &amp; Traction</td>
<td>Ch. 8,13</td>
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<tr>
<td>13-Feb</td>
<td>Review</td>
<td>Ch. 1-4,8,13</td>
</tr>
<tr>
<td>15-Feb</td>
<td><strong>EXAM #1</strong></td>
<td>Ch. 1-4,8,13</td>
</tr>
<tr>
<td>20-Feb</td>
<td>Establishing Core Stability</td>
<td>Ch. 5</td>
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<tr>
<td>22-Feb</td>
<td>Reestablishing Neuromuscular Control</td>
<td>Ch. 6</td>
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<tr>
<td>27-Feb</td>
<td>Reestablishing Neuromuscular Control, PNF</td>
<td>Ch. 6,14</td>
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<tr>
<td>1-Mar</td>
<td>Regaining Postural Stability and Balance</td>
<td>Ch. 7</td>
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<tr>
<td>6-Mar</td>
<td>Muscular Strength, Endurance, Power</td>
<td>Ch. 9</td>
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<tr>
<td>8-Mar</td>
<td>OKC vs CKC, Plyometric Exercise</td>
<td>Ch. 12,11</td>
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<td>13-Mar</td>
<td>Spring Break – No Class</td>
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<tr>
<td>15-Mar</td>
<td>Spring Break – No Class</td>
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<tr>
<td>20-Mar</td>
<td>Cardiorespiratory Fitness</td>
<td>Ch. 10</td>
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<tr>
<td>22-Mar</td>
<td>Review</td>
<td>Ch. 5-7, 9-12,14</td>
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<tr>
<td>27-Mar</td>
<td><strong>EXAM #2</strong></td>
<td>Ch. 5-7, 9-12,14</td>
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<tr>
<td>29-Mar</td>
<td>Aquatic Therapy, Functional Progression</td>
<td>Ch. 15,16</td>
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<tr>
<td>3-Apr</td>
<td>EBP: Ankle rehabs</td>
<td>Ch. 23 &amp; Article</td>
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<tr>
<td>5-Apr</td>
<td>EBP: ACL rehabs</td>
<td>Ch. 21 &amp; Article</td>
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<tr>
<td>10-Apr</td>
<td>EBP: Tendinopathy rehabs</td>
<td>Ch. 21,22 &amp; Article</td>
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<td>12-Apr</td>
<td>EBP: Shoulder rehabs</td>
<td>Ch. 17 &amp; Article</td>
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<tr>
<td>17-Apr</td>
<td>EBP: LBP rehabs</td>
<td>Ch. 24 &amp; Article</td>
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<td>19-Apr</td>
<td>EBP: Screening – FMS</td>
<td>Article</td>
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<tr>
<td>24-Apr</td>
<td>EBP: Neuroplasticity</td>
<td>Article</td>
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<tr>
<td>26-Apr</td>
<td>Case Studies</td>
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<tr>
<td>1-May</td>
<td>Review for the Final</td>
<td>Ch. 15-17,21-24, Article</td>
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<tr>
<td>8-May</td>
<td><strong>FINAL EXAM (8am-10:30pm)</strong></td>
<td>Comprehensive!!</td>
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*The instructor reserves the right to change the schedule to cover all subjects thoroughly. Any changes in test dates will be announced in class at least one class prior to the tentative exam date.*