KINE 4336
Musculoskeletal Rehabilitation
(3 credit hours)
FALL 2013
TR 8 – 9:20 am
MAC 223

Instructor: Dr. Cindy Trowbridge, ATC, CSCS, LAT
Office: 228 Activities Building
Office Phone: (817) 272-3134
E-mail: ctrowbridge@uta.edu
Office Hours: MW: 11-12; TR: 1-2; or by appointment

Required Texts:

Supplemental Texts: Available in Dr. Trowbridge’s Office or Library

Course Description
A study of the scientific theory and basic principles of lower extremity musculoskeletal rehabilitation and non-electric therapeutic modalities will guide the course. Emphasis will be placed on understanding the disablement model and learning how to plan, implement, document, and evaluate programs for the rehabilitation and reconditioning of injuries and illnesses of athletes and others involved with physical activity. Operation of superficial heating and cooling therapeutic modalities and how manual treatments (e.g., traction, positional release and massage) can be incorporated into a rehabilitation program will be investigated. The underlying principles and application techniques for each modality, therapeutic exercise progressions, patient clinical goals, legal and safe practice guidelines, and evidence based therapeutic modality science will allow for critical thinking and problem solving in relation to common lower extremity injuries. Both surgical and non-surgical rehabilitation models for the lower extremity will be discussed with a special emphasis on the use of functional progressions. (Lecture 3 hrs). For ATEP students, concurrent enrollment in KINE 4130.

Course Objectives
1. To provide undergraduate students in the Athletic Training Education Program (ATEP) with the knowledge of select therapeutic modalities and therapeutic musculoskeletal rehabilitation and reconditioning. Specific emphasis will be placed on non-electric modalities and the lower extremity including functional assessment and progression. These skills are necessary for effective performance as athletic trainer in a rehabilitation setting.
2. To provide understanding of the underlying principles and techniques of safe and efficient application of select therapeutic modalities and prescription of lower extremity musculoskeletal rehabilitation programs.
3. To present the art and science of evidence based learning as it pertains to therapeutic modalities and musculoskeletal rehabilitation and conditioning. Students will be taught how to critically read and
assess peer-reviewed literature as it relates to therapeutic modalities and musculoskeletal rehabilitation.

4. To provide athletic training students with knowledge and skills related to the following educational competencies contained in the Athletic Training Education Competencies (5th ed).
   a. Therapeutic Interventions: TI 1-20 (specific to lower extremity and non-electric modalities).
   b. Clinical Examination: CE 4,5,10,14.
   c. Evidence Based Practice: EBP 1-14.
   d. Prevention and Health Promotion: PHP 19
   e. Psychosocial Strategies and Referral: PS 2, 7-9

5. To expose AT students to the four main components of problem solving approach of therapeutic exercise design: 1) assess needs, 2) develop plan, 3) implement plan, and 4) evaluate plan.

6. To allow for active learning and active participation throughout class.

7. To allow for critical thinking that involves application of scientific knowledge and problem solving to musculoskeletal rehabilitation program prescription.

8. To provide AT students with further understanding and application of the Foundational Behaviors of Professional Practice of Athletic Training.
   a. Primacy of patient; Teamed approach to patient; Legal practice; Ethical practice; Advancing knowledge; Cultural competence; Professionalism.

9. To assess knowledge and skills through assignments and examinations.

**Active Learning**

Your active participation in this class will be required. As a result you will self-direct your studies by being responsible for your own learning. I will guide you in this process; however, in the end the onus of learning will be your responsibility. Organize your learning around the tasks and problems you encounter as an athletic training or kinesiology student. Use the vast number of resources (perceptors, internship mentors, books, ATEP lab, and articles) around you to synthesize the information you are learning and apply it whenever you get the chance. Do not be afraid to ask questions or challenge the current medical or scientific assumptions. Your brain will only grow in response to how much it is challenged and used. Become intrinsically motivated to improve yourself and your musculoskeletal rehabilitation skills and techniques; if you do this you will succeed every time.

**Student Learning Outcomes**

After completing this course, students should be able to:

1. understand the terminology, principles, and basic concepts of evidence based practice.
2. understand the terminology, principles, and basic concepts of non-electrical modalities (heat, cold, and manual therapies).
3. understand the terminology, principles, and basic concepts of musculoskeletal rehabilitation planning for the lower extremity.
4. understand the terminology, principles, and basic concepts of tissue healing.
5. understand the terminology and process of different types of orthopedic surgeries.
6. integrate the use of musculoskeletal exercises and techniques to meet the needs of the individual patient.
7. develop a rehabilitation treatment plan based on the results of a thorough injury assessment and evaluation.
8. critically think and problem solve using the most recent evidence based medicine.
Tentative Evaluation:

Knowledge and Skills  90%

Written Exams
- TEST 1  10%
- TEST 2  10%
- TEST 3  10%
- Comprehensive Final Exam  15%
Worksheets/Lab Activities  15%
Quizzes  5%
Research Article presentations – Review/Critiques  10%
Clinical Case Study  5%
Evidence Based Medicine Project  10%

Professional Development  10%

Complete Course Notebook, Attendance, and Active class participation
Membership in professional or University associations

Grading Scale:
A = 90%; B = 80%; C = 70%; D = 60%; F = 59% and below

Grading
Students are expected to keep track of their performance throughout the semester and seek guidance from available sources (including the instructor) if their performance drops below satisfactory levels.

Assignments and Exams
Assignments are DUE on the posted or announced date at the beginning of class or via Blackboard submission. If an assignment is turned in late, points will be deducted from the assignment. If an assignment is not completed within one week of posted due date you will receive a zero grade for that assignment.

There will be three unit exams and one comprehensive final exam for this class. Exams will be multifaceted with recall, application, and analysis questions throughout. Exams will include multiple choice, short answer, and problem solving questions. Use your lecture notes, textbooks, and assignments to prepare yourself for the exams.

- Exams may be in-class portions, Blackboard portions, or they may be take-home.

Missed exams, quizzes, and homework can only be made up if absence was excused. All missed exams, quizzes, and homework must be made up within one week of original due date.

Worksheets/Lab Activities
Throughout the semester there will be worksheets and lab activities posted on Blackboard. Each worksheet will pertain to specific topic areas and should be handed in according to due date on tentative schedule. You may work together on these worksheets/activities; however, each student must turn in his/her own work to receive credit. Worksheet/Activity MUST be submitted via Blackboard.

Article Presentation
You will be required to present one research article within the topic of therapeutic exercise. This article will be provided by Dr. Trowbridge and assigned dates will be given at least one week prior to presentation. Each student will summarize the article (Background, Purpose, Methods, Results, and Conclusions) and present to the class using PowerPoint and handouts as appropriate. Presentations should not be longer than 5-8 minutes. Grades will be assigned based on quality of presentation. Specific examples will be provided for assistance.
Clinical Case Studies
Each student will complete a case study paper following guidelines for Journal of Athletic Training. You must choose a patient that is being treated in your clinical setting. Ideally, you will be directly involved in the clinical decision-making during the patient’s musculoskeletal rehabilitation.

More instructions will be provided in regards to project. NOTE: This project will link directly with your evidence based medicine project.

Evidence Based Medicine Project – Critically Appraised Topic (CAT) Paper
Evidence based medicine (EBM) is the integration of clinically relevant research, clinical skills and experience, and patient preferences and values (Sackett et al 2000). The increased awareness and focus on the practice of Evidence Based Medicine comes from our daily need for valid information about diagnosis, prognosis, therapy, and prevention. The Evidence Based Project is designed so each student can explore a common therapeutic rehabilitation technique used in the athletic training setting and determine what evidence is available to support one of its current uses. It is also structured so logical questions about the effectiveness of therapeutic exercise will be developed so future study and exploration can occur.

Students will be allowed to choose their own topic(s), but must receive approval from Dr. Trowbridge. Because the EBM project revolves around your case study, the topic must be related to the therapeutic treatments delivered to patient in case study.

More details regarding the project will be posted on Blackboard and discussed in class. Important due dates will be posted on Blackboard site as this project will be completed in steps. Undergraduate students will complete one (1) CAT.

Expectations for Out-of-Class Study
A general rule of thumb is this: for every credit hour earned, a student should spend 3 hours per week working outside of class. Beyond the time required to attend each class meeting, students enrolled in this course should expect to spend at least an additional 9 hours per week of their own time in course-related activities, including reading required materials, completing assignments, preparing for exams, etc.

Notebook
At the end of the semester, each student is required to turn in his/her course notebook for a grade. You will have two options for your end of semester notebook. (1) Electronic file system on “flash” drive with paper records of syllabus, handouts, quizzes, and/or tests. Electronic files and paper copies must be neat and organized and accompanied by a table of contents or (2) A three-ring notebook that includes syllabus, lecture notes, handouts, tests, quizzes, worksheets, lab activities, EBM project(s). Notebook is expected to be neat and organized with section tabs and a table of contents. When returned, this notebook should be placed in your own athletic training portfolio for use in studying for certification exam.

Attendance
Class attendance is required. Excused absences include university approved absences or those that I receive prior notification of (i.e. illness, doctor appointments, etc.). Each student is expected to prepare for class by reading the lab material prior to class. If you miss a class, you are responsible for obtaining all information presented. Remember: Poor planning on your part is not an emergency on my part. Two unexcused absences will automatically drop your grade by one letter (i.e., A to B, B to C, etc.).
Cell Phone Policy

No cell phones in class for verbal or text message conversations. Please turn them off or silence them during our class period. If you actively perform or receive cell phone calls or text messaging during class, I will confiscate your electronic device. No exceptions.

University Policies

Grade Grievances: Any appeal of a grade in this course must follow the procedures and deadlines for grade-related grievances as published in the current undergraduate / graduate catalog. For undergraduate courses, see http://www.uta.edu/catalog/content/general/academic_regulations.aspx#19; for graduate courses, see http://grad.pci.uta.edu/about/catalog/current/general/regulations/#grade_grievances.

Drop Policy: Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student’s responsibility to officially withdraw if they do not plan to attend after registering. Students will not be automatically dropped for non-attendance. Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (http://www.uta.edu/aao/fao/).

Americans with Disabilities Act: The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the Americans with Disabilities Act (ADA). All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (817) 272-3364.

Academic Integrity: Students enrolled in this course are expected to adhere to the UT Arlington Honor Code:

I pledge, on my honor, to uphold UT Arlington’s tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.

UT Arlington faculty members may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System Regents’ Rule 50101, §2.2, suspected violations of university’s standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student’s suspension or expulsion from the University.

Student Support Services: UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and
information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at www.uta.edu/resources.

**Electronic Communication:** UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at http://www.uta.edu/oit/cs/email/mavmail.php.

**Student Feedback Survey:** At the end of each term, students enrolled in classes categorized as “lecture,” “seminar,” or “laboratory” shall be directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student’s feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington’s effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit http://www.uta.edu/sfs.

**Final Review Week:** A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week unless specified in the class syllabus. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

**Emergency Exit Procedures:** Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit, which is located by accessing the outdoor patio and using stairs to descend to outdoor basketball courts or by using the internal stairway and exiting via the emergency exit door. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist handicapped individuals.

**Librarian to Contact**

For assistance with your library needs in this course, please consult:

**Suzanne Beckett (sbeckett@uta.edu); Central Library, Room 212; 817.272.0923.**

The following web links are provided to help you navigate the library system.

- Library Home Page  http://www.uta.edu/library
- Subject Guides  http://libguides.uta.edu
- Subject Librarians  http://www-test.uta.edu/library/help/subject-librarians.php
- E-Journals  http://utalink.uta.edu:9003/UTAlink/az
- Off-Campus Connection  http://libguides.uta.edu/offcampus
- Ask A Librarian  http://ask.uta.edu
# KINE 4336 Musculoskeletal Rehabilitation
## Tentative Lecture Schedule – Fall 2013

As the instructor for this course, I reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course. –Dr. Cindy Trowbridge

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Chapter(s)/Materials</th>
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<tbody>
<tr>
<td>TH 8/22</td>
<td>Course introduction and Syllabus</td>
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</tr>
<tr>
<td>T 8/27</td>
<td>Foundations and Goals of Therapeutic Interventions</td>
<td></td>
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<tr>
<td></td>
<td>Science of Therapeutic Modalities</td>
<td>CH 1 (Houglum) CHs 1 &amp; 4, pp.183-192 (Knight)</td>
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<tr>
<td>TH 8/29</td>
<td>Problem Solving Approach to Rehabilitation</td>
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<td></td>
<td>Goal Setting/Psychology of Rehabilitation</td>
<td>CH 1 &amp; 4 (Houglum) CH 1 (Knight)</td>
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<tr>
<td>T 9/3</td>
<td>Evidence Based Practice for Therapeutic Interventions</td>
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<td></td>
<td></td>
<td>CH 2 (Knight)</td>
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<tr>
<td>TH 9/5</td>
<td>Physiology and Psychology of Pain</td>
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<td>T 9/10</td>
<td>Pain Control Theories and Superficial Therapeutic Modalities</td>
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<td>CH 8 &amp; 9 (Knight)</td>
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<tr>
<td>TH 9/12</td>
<td>Concepts of Tissue Healing</td>
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<td>T 9/17</td>
<td>Tissue Healing and Time Frames</td>
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<td></td>
<td></td>
<td>CH 2 (Houglum) CH 7 (Knight)</td>
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<td>Inflammatory phase</td>
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<td>TH 9/19</td>
<td>Proliferation and Maturation Healing Phases</td>
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<td>CH 2 (Houglum) CH 7 (Knight)</td>
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<tr>
<td>T 9/24</td>
<td>EXAM #1</td>
<td>All previous material</td>
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<tr>
<td>TH 9/26</td>
<td>Principles and Physiology of Cryotherapy</td>
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<td>T 10/1</td>
<td>Principles and Physiology of Thermotherapy</td>
<td>CHs 6, 12 &amp; 13 (Knight)</td>
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<td>T 10/3</td>
<td>Superficial Cryotherapy and Thermotherapy</td>
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<td>Evidence Based Moments - Articles</td>
<td>Handouts/Articles</td>
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<tr>
<td>T 10/8</td>
<td>Tissue and Neuromuscular Factors associated with ROM</td>
<td>CHs 5 &amp; 11 (Houglum)</td>
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<tr>
<td>TH 10/10</td>
<td>Effects of Immobilization on Tissue</td>
<td>CH 6 (Houglum)</td>
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<tr>
<td>T 10/15</td>
<td>Restoring Range of Motion</td>
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<td>CH 5 &amp; 11 (Houglum)</td>
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<td>T 10/17</td>
<td>Superficial Modalities and ROM</td>
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<td>Evidence Based Moments - Articles</td>
<td>Articles/Handouts</td>
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<tr>
<td>T 10/22</td>
<td>EXAM #2</td>
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<td>T 10/24</td>
<td>Muscle Strength/Endurance Principles</td>
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<td>Concepts of Lower Extremity Rehabilitation</td>
<td>CHs 7 &amp; 11 (Houglum)</td>
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<tr>
<td>T 10/29</td>
<td>Principles of Joint Mobilization for the Lower Extremity</td>
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<td>CH 6 (Houglum) – Jt. Mobs</td>
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<tr>
<td>T 10/31</td>
<td>Neuromuscular Rehabilitation</td>
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<tr>
<td>T 11/5</td>
<td>Rehabilitation of Foot, Ankle, &amp; Lower Leg</td>
<td>CH 22 (Houglum)</td>
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<tr>
<td>T 11/7</td>
<td>Rehabilitation of Foot, Ankle, &amp; Lower Leg</td>
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<tr>
<td>T 11/12</td>
<td>Rehabilitation of Knee</td>
<td>CH 23 (Houglum)</td>
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<td>T 11/14</td>
<td>Rehabilitation of Knee</td>
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<tr>
<td>T 11/19</td>
<td>Rehabilitation of Knee and Hip Musculature</td>
<td>CH 24 (Houglum)</td>
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<tr>
<td>T 11/21</td>
<td>Principles and Physiology of Massage &amp; Myofascial Release</td>
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<td>T 11/26</td>
<td>Principles and Physiology of Traction &amp; Positional Release</td>
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<td>CH 6 (Houglum) - topics</td>
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<tr>
<td>T 11/28</td>
<td>HAPPY THANKSGIVING</td>
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<tr>
<td>T 12/3</td>
<td>Clinical Use of Manual Therapy</td>
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<td>Evidence Based Moments - Articles</td>
<td>Articles/Handouts</td>
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**UNIT #3 EXAM**

**TUESDAY DECEMBER 12, 2013 8:00 am – 10:30 am**

**FINAL EXAM: Take Home: DUE Wednesday 12/13/13 by 11:59 pm**
The University of Texas at Arlington College of Education and Health Professions

Mission, Core Values and Professional Dispositions

MISSION: To develop and deliver an educational program that ensures the highest teacher, administrator and allied health science preparation and performance and

To be a recognized contributor in the field of educational and allied health science research and practice through effective teaching, quality research and meaningful service.

The Educator and Administrator Preparation units’ collaboratively developed shared vision is based on these CORE VALUES, dispositions and commitments to:

- Excellence
- Learner-centered environment
- Research-based
- Collaboration
- Diversity
- Technology
- Field Experiences
- Life-long Learning

Each candidate in the Educator and Administrator Unit of the College of Education of UT-Arlington will be evaluated on PROFESSIONAL DISPOSITIONS by faculty and staff. These dispositions have been identified as essential for a highly-qualified educator. Instructors and program directors will work with candidates rated as “unacceptable” in one or more stated criteria. The candidate will have an opportunity to develop a plan to remediate any deficiencies.

Demonstrates excellence
- Meets stated expectations of student performance.
- Keeps timelines. Arrives on time for class and other activities.
- Produces significant artifacts of practitioner evidence.
- Possesses a willingness to set goals.
- Attends all classes/trainings and practicum experiences.
- Completes activities as assigned.
- Has appropriate personal appearance and/or hygiene for professional setting.

Participates in a learner centered environment and shows respect for self and others
- Uses appropriate and professional language and conduct.
- Supports a “high quality” learning environment.
- Shows respect and consideration for the thoughts and feelings of others.

Research-based pedagogy
- Has an awareness of and willingness to accept research-based concepts.
- Identifies important trends in education.
- Demonstrates interests in learning new ideas and strategies.
- Relates class discussions and issues to current events in education.

Participates in on-going collaboration with peers and professionals
- Demonstrates kindness, fairness, patience, dignity and respect in working with peers, staff and instructors.
- Works effectively with others.
- Assists others in the university classroom or practicum setting.
- Demonstrates an openness to assistance from others.
- Receives feedback in a positive manner and makes necessary adjustment.

Exhibits stewardship of diversity
- Shows appropriate stewardship and tolerance to diverse people, environments, and situations.

Advocates use of technology
- Uses and applies existing technologies sufficiently in work.
- Shows a willingness to use and apply emerging technologies in work.

Shows interest in the learner and the learning-process
- Demonstrates significant learning improvement over time.
- Shows interest in the learning process and demonstrates the necessary amount of time, energy, and enthusiasm for becoming better learners, teachers, and practitioners.