**The UT Arlington Syllabus**

**ELED 4311-002: TEACH MATH IN EARLY & ELEM ED**

Fall 2016

**Instructor(s):** Joohi Lee, Ph. D.

**Office Number:** Science Hall 322 C

**Office Telephone Number:** 817-272-2264

**Email Address:** joohilee@uta.edu

**Faculty Profile:** <https://www.uta.edu/profiles/joo-lee>

**Office Hours:** Tuesdays 2:00-4:00 P.M. & By Appointment

**Section Information:** ELED 4311-001

Time and Place of Class Meetings: TH 115, Mondays, 4:30-7:20 P.M.

**Description of Course Content**

NCTM’s 6 principles to implement high quality mathematics in early and elementary education; Emphasis on developing and promoting children’s mathematical process skills (problem solving, reasoning & proof, representation, connection, and communication) and content knowledge (number & operations, algebra, geometry, measurement, and data analysis & probability); Development math lesson plans in a developmentally appropriate manner including appropriate objectives, materials, activities, assessment, and lesson modifications. Course will also address the instructional needs and appropriate assessment of all students in inclusive, multicultural & multilingual, and ESL classrooms for this content area. Field-based experiences required - One full day per week on elementary campus.) Prerequisite: EDUC 4316, ELED 4313, 4317, 4321, EDTC 4301 and BEEP 4306. Taken concurrently with ELED 4312, ELED 4314 and BEEP 4384.

**Student Learning Outcomes**

This course was developed to help EC-6 teacher candidates understand developmentally appropriate practice in teaching mathematics. By completing this course, expected learning outcomes are as follows:

* Being able to identify effective teaching strategies behaviors that contribute to constructivist teaching and being able to implement constructive teaching
* Being able to effectively promote children’s mathematics reasoning.
* Being able to design, develop, and implement mathematics lessons for young children based on their needs aligned with standard requirements (National & State).
* Being able to identify mathematics content expected for children at specific grade level(s).
* Being able to design and implement a rich math environment that promotes children’s mathematics concepts.

**Required Textbooks and Other Course Materials:**

* See your course schedule for weekly required e-reading & e-activities.
* Lee, J. (2016). *Elementary mathematics for young children*. CA: San Diego, Cognella Academic Publishing.
* Texas Higher Education Coordinating Board., & Texas Education Agency. (2009). College and Career Readiness Standards (CCRS). Available on the Web: <http://www.thecb.state.tx.us/collegereadiness/crs.pdf>
* National Council of Teachers of Mathematics. (2000). *Principles and Standards for School*

*Mathematics.* Available on the web <http://standardstrial.nctm.org/triallogin.asp>

* Texas Education Agency. (2010). Texas Essential Knowledge and Skills (TEKS) for pre K through Grade 6.

Available on the web: <http://ritter.tea.state.tx.us/rules/tac/chapter111/index.html>

* Teaching Math to Young Children (IES) http://ies.ed.gov/ncee/wwc/pdf/practice\_guides/early\_math\_pg\_111313.pdf
* The College of Education and Health Professions is pleased to announce the adoption of **Tk20**, a comprehensive data management system that will provide us with powerful tools to manage our growth and streamline our processes to enable us to meet your needs more efficiently and effectively. As with other course materials, you will need to subscribe to the program for a one-time only, non-refundable cost of $100. You may purchase your subscription online from a link provided on the system’s Web site or from the UT Arlington Bookstore as you would a textbook or other course materials.

**State Guidelines, Competencies and Professional Organizations**

|  |
| --- |
| * NCTM: [www.nctm.org](http://www.nctm.org)
* ACEI: [www.acei.org](http://www.acei.org)
* TEKS: <http://ritter.tea.state.tx.us/rules/tac/chapter111/index.html>
* CCRS: <http://www.thecb.state.tx.us/collegereadiness/crs.pdf>
* STARR: <http://www.tea.state.tx.us/student.assessment/staar/> - STAAR (The State of Texas Assessments of Academic Readiness
* ESL EC 6 Core Subject Manual:

<http://cms.texes-ets.org/files/6614/1027/0774/core_subjects_ec_6_291.pdf> |

**Conceptual Framework**

The conceptual framework of the UT-Arlington College of Education was developed collaboratively and has evolved over time. Following the identification of a set of core values held by all involved in the preparation of candidates enrolled in the College, members of the university, PK-12 districts and area business and foundation communities worked together to develop a shared vision for education.

All activities in the College are guided by the belief that we are Partners for the Future, committed to fostering critical, creative thinkers prepared to engage meaningfully in a dynamic society. This belief is characterized and distinguished by three core values: Professionalism, Knowledge, and Leadership. Research, Diversity, and Technology are themes woven throughout each core value. The College mission, core values and themes serve as the coherent thread running through all professional programs, guiding the systematic design and delivery of clinical/field experiences, course curricula, assessments, and evaluation. The Conceptual Model consists of six interrelated and interacting components, which are viewed as essential contexts for the shaping of informed, skilled, and responsible partners.

* The first core value, **Professionalism**, represents the assumption that candidates develop an expertise and specialized knowledge of their field. A high quality of work, standard of professional ethics and behaviors, as well as work morale and motivation are all necessary factors of a developed interest and desire to do a job well.
* The second core value, **Knowledge**, represents candidate theoretical or practical understanding of a subject. In today’s world, candidate knowledge includes not only academic content mastery, but also skills such as critical thinking, communication, technology literacy, and collaboration, each required for success in college, life, and career.
* The third core value, **Leadership**, represents candidate ability to organize, assist, and support others in the achievement of a common task. Candidates develop and refine their leadership skills within the eontext of their interactions with curricula, faculty, and other professionals.

The next three components of the model, Research, Diversity, and Technology, represent themes woven into the core values:

* **Research** encompasses the investigation of ideas and theories with the purpose of discovering, interpreting, and developing new systems, methods, and support for knowledge, behaviors, and attitudes.
* **Diversity** is an indispensable component of academic excellence. A commitment to diversity means a dedication to the inclusion, welcome, and support of individuals from all groups, encompassing the various characteristics of persons in our community such as race, ethnicity, national origin, gender, age, socioeconomic background, religion, sexual orientation, and disability.
* **Technology** is emphasized throughout all programs and is used to support and improve student learning.

All components lead to the achievement of one goal – the development of informed and responsible ***Partners for the Future*** – who are committed to fostering analytical, innovative thinkers prepared to engage meaningfully in a dynamic society.

**Descriptions of major assignments and examinations:**

|  |  |  |
| --- | --- | --- |
| **Assignments** |  **ACEI** | **TExES** |
| * **Individual Mathematics Lesson Plan Project II (30 pts)**
* Pre-reflection; 5 pts
* Mathematics Lesson Plan; 20 pts
* Post-reflection; 5 pts

Observation form from your mentor teacher; (5 pts will be deducted if you fail to submit your observation form) | **2.3** | **I, II, III, IV, V, VI, VII, VIII, IX** |
| * **Math Activity Set (30 pts)**-Group Work
* Brain Teaser Activity (5 pts)
* 3 math games or interactive activities (15 pts)
* Literature integration (5 pts)
* Technology Integration (5 pts)
 | **2.3** | **I, II, III, IV, V, VI, VII** |
| * **Weekly Math Quiz on BB (20 pts)**
 | **2.3** | **I, II, III, IV** |
| * **Final Exam (20 pts)**
 | **2.3** | **I, II, III, IV, V, VI, VII** |

**Standards Alignment**

|  |
| --- |
| **National Standards:** |
| **ACEI (NCATE SPA)****Curriculum 2.3****Mathematics** | Candidates know, understand, and use the major concepts and procedures that define number and operations, algebra, geometry, measurement, and data analysis and probability. In doing so they consistently engage problem solving, reasoning and proof, communication, connections, and representation. |
| **NCTM Math Standards**  | Check out the following link for both content and process standards of mathematics.http://www.nctm.org/standards/content.aspx?id=16909 |

|  |
| --- |
| **State Standards**  |
| **TX Generalist ESL EC-6 Mathematics Standards:** |
| ***Standard I. Number Concepts******Standard II. Patterns and Algebra******Standard III. Geometry and Measurement:******Standard IV. Probability and Statistics*** | The mathematics teacher understands and uses numbers, number systems and their structure, operations and algorithms, quantitative reasoning, and technology appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills [TEKS]) in order to prepare students to use mathematics.The mathematics teacher understands and uses patterns, relations, functions, algebraic reasoning, analysis, and technology appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills [TEKS]) in order to prepare students to use mathematics.The mathematics teacher understands and uses geometry, spatial reasoning, measurement concepts and principles, and technology appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills [TEKS]) in order to prepare students to use mathematics. The mathematics teacher understands and uses probability and statistics, their applications, and technology appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills [TEKS]) in order to prepare students to use mathematics. |
| ***Standard V. Mathematical Processes:******Standard VI. Mathematical Perspectives******Standard VII. Mathematical Learning and Instruction******Standard VIII. Mathematical Assessment:******Standard IX. Professional Development:*** | The mathematics teacher understands and uses mathematical processes to reason mathematically, to solve mathematical problems, to make mathematical connections within and outside of mathematics, and to communicate mathematically. The mathematics teacher understands the historical development of mathematical ideas, the interrelationship between society and mathematics, the structure of mathematics, and the evolving nature of mathematics and mathematical knowledge.The mathematics teacher understands how children learn and develop mathematical skills, procedures, and concepts, knows typical errors students make, and uses this knowledge to plan, organize, and implement instruction; to meet curriculum goals; and to teach all students to understand and use mathematics.The mathematics teacher understands assessment and uses a variety of formal and informal assessment techniques appropriate to the learner on an ongoing basis to monitor and guide instruction and to evaluate and report student progress. The mathematics teacher understands mathematics teaching as a profession, knows the value and rewards of being a reflective practitioner, and realizes the importance of making a lifelong commitment to professional growth and development. |
| **Texas College and Career Readiness Standards (CCRS)** |
| See the pages 7 through 11 for Texas CCRS content standards of Math.<http://www.thecb.state.tx.us/index.cfm?objectid=EAE69736-B39D-F3FF-EA777519F1F0348B>\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* |

**Attendance:** At The University of Texas at Arlington, taking attendance is not required but attendance is a critical indicator in student success. Each faculty member is free to develop his or her own methods of evaluating students’ academic performance, which includes establishing course-specific policies on attendance. As the instructor of this section, I will take your attendance every week. You are responsible to sign-in when arriving the classroom. Your sign-in will be used for your attendance record. Sign-in sheet will always be available before the class begins

### Grading:

Final numerical valuations relate to letter grades and points as follows:

A = 93 – 100%, B = 85 – 92%, C = 77- 84%, D = 70- 76%, F = Below 70%

**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://wweb.uta.edu/aao/fao/>).

**Disability Accommodations:** UTArlington 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), The Americans with Disabilities Amendments Act (ADAAA),* and *Section 504 of the Rehabilitation Act.* 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 disability. Students are responsible for providing the instructor with official notification in the form of **a letter certified** by the Office for Students with Disabilities (OSD).Only those students who have officially documented a need for an accommodation will have their request honored. Students experiencing a range of conditions (Physical, Learning, Chronic Health, Mental Health, and Sensory) that may cause diminished academic performance or other barriers to learning may seek services and/or accommodations by contacting:

**The Office for Students with Disabilities, (OSD)** [www.uta.edu/disability](http://www.uta.edu/disability) or calling 817-272-3364. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at [www.uta.edu/disability](http://www.uta.edu/disability).

**Counseling and Psychological Services, (CAPS)** [www.uta.edu/caps/](http://www.uta.edu/caps/) or calling 817-272-3671 is also available to all students to help increase their understanding of personal issues, address mental and behavioral health problems and make positive changes in their lives.

**Non-Discrimination Policy:** *The University of Texas at Arlington does not discriminate on the basis of race, color, national origin, religion, age, gender, sexual orientation, disabilities, genetic information, and/or veteran status in its educational programs or activities it operates. For more information, visit*[*uta.edu/eos*](http://www.uta.edu/hr/eos/index.php)*.*

**Title IX Policy:** The University of Texas at Arlington (“University”) is committed to maintaining a learning and working environment that is free from discrimination based on sex in accordance with Title IX of the Higher Education Amendments of 1972 (Title IX), which prohibits discrimination on the basis of sex in educational programs or activities; Title VII of the Civil Rights Act of 1964 (Title VII), which prohibits sex discrimination in employment; and the Campus Sexual Violence Elimination Act (SaVE Act). Sexual misconduct is a form of sex discrimination and will not be tolerated.*For information regarding Title IX, visit* [www.uta.edu/titleIX](http://www.uta.edu/titleIX) or contact Ms. Jean Hood, Vice President and Title IX Coordinator at (817) 272-7091 or [jmhood@uta.edu](file:///C%3A%5CUsers%5Cingrams%5CDownloads%5Cjmhood%40uta.edu).

**Academic Integrity:** Students enrolled all UT Arlington courses 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 in their courses by 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. Additional information is available at <https://www.uta.edu/conduct/>.

**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>.

**Campus Carry:** Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes as prohibited. Under the new law, openly carrying handguns is not allowed on college campuses. For more information, visit <http://www.uta.edu/news/info/campus-carry/>

**Student Feedback Survey:** At the end of each term, students enrolled in face-to-face and online classes categorized as “lecture,” “seminar,” or “laboratory” are 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 via the SFS database is aggregated with that of other students enrolled in the course. Students’ anonymity will be protected to the extent that the law allows. UT Arlington’s effort to solicit, gather, tabulate, and publish student feedback is required by state law and aggregate results are posted online. Data from SFS is also used for faculty and program evaluations. For more information, visit <http://www.uta.edu/sfs>.

**Final Review Week:** for semester-long courses**,** 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 the same as the classroom doors. 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 individuals with disabilities.

You are strongly encouraged to subscribe to the MavAlert system that will send information in case of an emergency to their cell phones or email accounts. Anyone can subscribe at <https://mavalert.uta.edu/> or <https://mavalert.uta.edu/register.php>

**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](http://www.uta.edu/universitycollege/current/academic-support/learning-center/tutoring/index.php), [major-based learning centers](http://www.uta.edu/universitycollege/resources/college-based-clinics-labs.php), developmental education, [advising and mentoring](http://www.uta.edu/universitycollege/resources/advising.php), personal counseling, and [federally funded programs](http://www.uta.edu/universitycollege/current/academic-support/mcnair/index.php). 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 <http://www.uta.edu/universitycollege/resources/index.php>.

**The IDEAS Center (**2nd Floor of Central Library) offers **free** tutoring to all students with a focus on transfer students, sophomores, veterans and others undergoing a transition to UT Arlington. To schedule an appointment with a peer tutor or mentor email IDEAS@uta.edu or call (817) 272-6593.

**The English Writing Center (411LIBR)**: The Writing Center Offers free tutoring in 20-, 40-, or 60-minute face-to-face and online sessions to all UTA students on any phase of their UTA coursework. Our hours are 9 am to 8 pm Mon.-Thurs., 9 am-3 pm Fri. and Noon-6 pm Sat. and Sun. Register and make appointments online at http://uta.mywconline.com. Classroom Visits, workshops, and specialized services for graduate students are also available. Please see [www.uta.edu/owl](http://www.uta.edu/owl) for detailed information on all our programs and services.

The Library’s 2nd floor Academic Plaza offers students a central hub of support services, including IDEAS Center, University Advising Services, Transfer UTA and various college/school advising hours. Services are available during the library’s hours of operation. <http://library.uta.edu/academic-plaza>

**Librarian to Contact:** Curriculum and Instruction Liberian-Mr. Andy Herzog, 817-272-7517, amherzog@uta.edu

**Course Schedule**

*“Students who enter college having mastered these standards are likely to be successful in entry-level college mathematics courses and to be prepared for courses in related disciplines that require mathematical proficiency*” (Texas College and Career Readiness, 2009, p. 8).

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Topic** | **Reading** | **Assignments** |
| **Aug 29** | **Course Orientation****Expectations****Screening Assessment** |  |  |
| **Sep 9** | **Labor Day (No Class)** |
| **Sep 12** | **What to teach & how to teach?****Math Standards (National, State, and CCRS)****NCTM****TEKS****CCRS**  |  |  |
| **Sep 19** | **Levels of representations in teaching children mathematics** **How children learn mathematics Approaches of Teaching Math****(Behaviorism vs. Constructivism)**  |  |  |
| **Sep 26** | **Developing number sense****Pre-Number Sense****Early Number Sense** |  |  |
| **Oct 3** | **Developing number sense** **Number Sense****Whole Number****Number and Operations****Number Theory in Elementary Education** |  |  |
| **Oct 10** | **Developing number sense** **Fraction, Decimals, & Percent**  | **Fraction with Borrowing**[**http://www.youtube.com/watch?v=KUpf6rzvnH4**](http://www.youtube.com/watch?v=KUpf6rzvnH4) | **Math Activity Set Presentation**  |
| **Oct 17** | **Promoting children’s algebraic thinking and teaching algebra** **Patterns & relationships** |  | **Math Activity Set Presentation**  |
| **Oct 24** | **Promoting children’s algebraic thinking and teaching algebra****Algebra and functions** |  | **Math Activity Set Presentation**  |
| **Oct 31** | **Geometry** **Triangles & Quadrilaterals**  |  |  |
| **Nov 7** | **Geometry** **Coordinate geometry****Plane transformation****3D and 2D connections** |  | **Lesson Plan Pre-Reflection Due on BB** |
| **Nov 14** | **Measurement** **Standard & non-standard units of measures****Measurement Attributes** **Area & perimeter, volume (capacity)** |  | **Lesson Plan Due on BB** |
| **Nov 21** | **NCTM’s Illumination****Virtual Math Manipulatives**  |  |  |
| **Nov 28** | **Data Analysis & Probability** |  | **Observation Form and Post-Reflection Due on BB** |
| **Dec 5** | **Dead Week****Review for the Final Exam****(In-class meeting will be set up if necessary)** |  |  |
| **Dec 12** | **Find Exam** |  |  |

***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. –Joohi Lee***

**Academic Honesty Statement:**

|  |
| --- |
| **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**The following statement is to be included on the cover page of each written assignment submittedfor credit in all ELED course. For assignments submitted electronically, the candidate’s name may be word-processed on the signature line. The posting of the statement with the candidate’s name through the candidate’s email, Blackboard, or TK-20 account t is recognized as the candidate’s signature.**\*\*\*\*\*\*\*\*\*\*****On my honor, I have neither given nor received aid on this assignment. I acknowledge that misrepresenting another’s work as my own is a violation of the UTA Academic Integrity Policy.** **I have not submitted the attached work as an assignment for any other course or field activity.** **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** **Signature Date** |

**Emergency Phone Numbers**: In case of an on-campus emergency, call the UT Arlington Police Department at **817-272-3003** (non-campus phone), **2-3003** (campus phone). You may also dial 911. Non-emergency number 817-272-3381