Course Syllabus
C&T 366: Classroom Interactions in Mathematics & Science
Spring 2018, 2031 Haworth
Mon/Wed 9:30 – 10:45 am

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Course Description and Purpose: This course continues the process of preparing prospective teachers to teach mathematics or science by providing opportunities to see how theories play out in instructional settings. Prospective teachers will explore multiple models of teaching (direct instruction, inquiry teaching, small groups, etc.); the advantages, disadvantages and uses of each; and what each model requires of teachers. Instructional activities, designed around models of how people learn, will be implemented, and then evaluated. Methods of probing student understanding through authentic assessment, including evaluating student artifacts, will be explored.

Prospective teachers will be made aware of equity and diversity issues in classroom teaching and ways of ensuring that all students have an opportunity to learn; learn how technology is used in classroom settings; learn how content and pedagogy combine to make effective teaching; and identify and evaluate best teaching practices presented in research literature. Instructors will facilitate demonstration and documentation of proficiencies for licensure through the development of a professional teaching portfolio.

Note: C&T 366 is part of a sequence of courses that allow UKanTeach students to earn a KU service learning certificate. It also satisfies the KU Core General Education Goal 2 Outcome 2.

Instructional Approach and Strategies: Active participation is a major component of this course. Cooperative learning strategies, formative assessment, and student reflection are used on a regular basis.

Use of Educational Technology in Course: Course information, announcements, assignments, documents, required readings and grades will be posted to Blackboard, at https://courseware.ku.edu/. PowerPoint presentations and other online tools are used during the semester.

Conceptual Framework for KU Teacher Education Program:

The primary mission of the School of Education is to prepare leaders in education and human services fields. As stated in the School Code:

> *Within the University, the School of Education serves Kansas, the nation, and the world by (1) preparing individuals to be leaders and practitioners in education and related human service fields, (2) expanding and deepening understanding of education as a fundamental human endeavor, and (3) helping society define and respond to its educational responsibilities and challenges.*

The components that frame this mission for our initial and advanced programs are Research and Best Practice, Content Knowledge, and Professionalism. These interlocking themes build our Conceptual Framework. C&T 366 emphasizes the interconnectedness of these three areas of the conceptual framework. Students are actively engaged as learners, which illustrates national recommendations for quality mathematics and science teaching. Students learn about best pedagogical practices through a series of readings, activities, and discussions.

Statement about diversity, inclusivity, and civility:

Diversity is an integral part of the University of Kansas School of Education's commitment to excellence. The faculty, staff, and students of the School of Education value inclusiveness and equal opportunity for diverse learners and an environment of mutual respect for all members of our community. We believe that all students benefit from training and experiences that will help them to learn, lead, and serve in an increasingly diverse society.

Course Objectives: Students will:

1. analyze and discuss how students' knowledge and skills can be built using a variety of instructional strategies.
2. create and evaluate tasks to build students' content knowledge, assessing students' content knowledge based on evidence including video and written artifacts.
3. plan and teach, multi-day, secondary mathematics or science lessons.
4. solve problems in mathematics and science, justify their solutions, and reflect on their own learning and the learning of others.
5. analyze classroom instruction and data on student participation and performance with regard to equitable and diverse instructional approaches.
6. employ relevant technologies in teaching; analyze how technology can affect classroom interactions.
7. read and analyze research results and theoretical literature in mathematics and science education.
8. create preliminary portfolios and demonstrate beginning competency as measured by applicable standards.

Professional Education Standards:

The following Kansas State Department of Education Professional Education Standards are addressed and developed throughout this course.

- Standard #1: The educator demonstrates the ability to use the central concepts, tools of inquiry, and structures of each discipline he or she teaches and can create opportunities that make these aspects of subject matter meaningful for all students.
- Standard #4: The educator understands and uses a variety of appropriate instructional strategies to develop various kinds of students' learning including critical thinking, problem solving, and reading.
- Standard #7: The educator plans effective instruction based upon the knowledge of all students, community, subject matter, curriculum outcomes, and current methods of teaching reading.
- Standard #8: The educator understands and uses formal and informal assessment strategies to evaluate and ensure the continual intellectual, social, and other aspects of personal development of all learners.
- Standard #9: The educator is a reflective practitioner who continually evaluates the effects of his or her choices and actions on others (students, parents, and other professionals in the learning community), actively seeks out opportunities to grow professionally, and participates in the school improvement process (Kansas Quality Performance Accreditation [QPA]).

Reading List:

There is no textbook for this class. There are readings and related materials associated with the field experience journals. Reading materials and guidelines will be posted to Blackboard.

University Policies:

Students with Disabilities: The KU Office of Disability Resources (DR) coordinates accommodations and services for all eligible students with disabilities. If you have a disability and wish to request accommodations please contact DR as soon as possible (22 Strong Hall; 864-2620 (V/TTY). Information about their services can be found at http://www.disability.ku.edu/. Please also contact me in regard to your needs in this course.

KU Policy on Scholastic Dishonesty: Students who violate university rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course. Since such dishonestly harms the individuals, all students, and the integrity of The University, policies on scholastic dishonesty will be strictly enforced.
http://www.studenthandbook.ku.edu/codes.shtml#Academic%20Misconduct

Course Requirements (450 points possible):

Participation – Participation in class and during teaching events is required. All students are expected to demonstrate a commitment to the education profession and behave in a professional manner. This includes being prompt and prepared for each class and teaching event.

Teaching/Field Experience (245 points) – You will observe and teach in secondary mathematics and science classrooms.

- Field Experience Journals – You will complete five journal entries while in the field. Each is worth 10 points.
- Final Lesson Plans – You will submit two final revised lesson plans. Each lesson plan is worth 20 points. Rubrics are used to assess final lesson plans.
- Analysis Papers – You will analyze your teaching and write two formal papers. You will present your results to our class. The paper and presentation of each teaching event are worth 65 points. Rubrics are used to assess analysis papers and presentations.
- Evaluation of Teaching – Your mentor teacher will complete an evaluation of your teaching. You will also complete a self-evaluation of your teaching. This teaching evaluation is worth 25 points.

Other Written Reflections (30 points) –

- Reflections – You will write three reflection papers. Each reflection is worth 10 points.

Projects/Presentations (175 points) –

- Struggling Learners Project – You will work with (e.g., tutor) students who struggle learning mathematics and science. You will write about your experience and present your findings to our class. This project is worth 50 points. A rubric is used to assess this project.
- Equity Project – You will select a topic that could interfere with learning in a mathematics or science classroom. You will research your topic and present your findings to our class. This project is worth 65 points. A rubric is used to assess this project.
- Portfolio – You will develop a professional teaching portfolio. This project is worth 60 points. A rubric is used to assess this project.

Assignment due dates and grading policy:

	Points	Due
Field Experience Journal 1	10	Friday, 2/9
Field Experience Journal 2	10	Friday, 2/16
Field Experience Journal 3	10	Friday, 2/23
Field Experience Journal 4	10	Friday, 4/7
Field Experience Journal 5	10	Friday, 4/14
Reflection 1	10	Friday, 1/26
Reflection 2	10	Friday, 2/2
Reflection 3	10	Friday, 5/4
Equity Project & Presentation	65	Week of 3/5. Materials due Friday, 3/9.
Struggling Learners Project & Presentation	50	Week of 4/16. Materials due Friday, 4/20.
Analysis of Teach 1 – Paper & Presentation	65	Week of 3/12. Paper due Friday, 3/16.
Teach 1 Lesson Plan (Final draft)	20	Friday, 3/16
Analysis of Teach 2 – Paper & Presentation	65	Week of 4/23. Paper due Friday, 4/27.
Teach 2 Lesson Plan (Final draft)	20	Friday, 4/27
Teaching Evaluation	25	Wednesday, 5/9
Portfolio Project	60	Friday, 5/11

Grading Scale: 90 – 100% A; 80 – 89% B; etc. *Plus and Minus grades will be assigned.* Assignments must be submitted by the due date. Generally, late work is not accepted. In certain situations, with a legitimate excuse, and with previous permission, assignments can be submitted after the due date but points may still be deducted.

Course Schedule:

	Topics/Activities	Assignments
Week 1		
Wed. 1/17	Introductions & Course organization	
Week 2		
Mon. 1/22 & Wed. 1/24	Lesson planning & Instructional strategies	Reflection 1: Diversity, Equity & Inclusion DUE Friday, 1/26 – 10 pts.
Week 3		
Mon. 1/29 & Wed. 1/31	Lesson planning & Cooperative Learning	Reflection 2: Cooperative Learning DUE Friday, 2/2 – 10 pts.
During Weeks 4 – 7 you should plan to come to class at least one day each week to work on preparing your lessons. Use the rest of your time for hours in the field.		
Week 4		
Mon. 2/5 & Wed. 2/7	Lesson planning	Field experience Journal 1 DUE Friday, 2/9 – 10 pts.
Week 5		
Mon. 2/12 & Wed. 2/14	Lesson planning & Practice teaching	Field experience Journal 2 DUE Friday, 2/16 – 10 pts.

During Weeks 4 – 7 you should plan to come to class at least one day each week to work on preparing your lessons. Use the rest of your time for hours in the field.		
	Topics/Activities	**Assignments**
Week 6		
Mon. 2/19 & Wed. 2/21	Lesson planning & Practice teaching	Field experience Journal 3 DUE Friday, 2/23 – 10 pts.
Week 7		
Mon. 2/26 & Wed. 2/28	Lesson planning & Practice teaching	
Week 8		
Mon. 3/5 & Wed. 3/7	Equity Project Presentations – In class on Mon. & Wed.	Equity Projects – PowerPoint & materials DUE Friday, 3/9 – 65 pts.
Week 9		
Mon. 3/12 & Wed. 3/14	Teach 1 Debriefing	Analysis Paper/Presentation – 65 pts. Lesson Plan #1 Final Draft – 20 pts. DUE Friday, 3/16
3/19 – 3/23 --- *Spring Break, no class*		
During Weeks 10 – 12 you should plan to come to class at least one day each week to work on preparing your lessons. Use the rest of your time for hours in the field.		
Week 10		
Mon. 3/26 & Wed. 3/28	Lesson planning & Practice teaching	
Week 11		
Mon. 4/2 & Wed. 4/4	Lesson planning & Practice teaching	Field experience Journal 4 DUE Friday, 4/6 – 10 pts.
Week 12		
Mon. 4/9 & Wed. 4/11	Lesson planning & Practice teaching	Field experience Journal 5 DUE Friday, 4/13 – 10 pts.
Week 13		
Mon. 4/16 & Wed. 4/18	Struggling Learners Presentations	Struggling Learners – PowerPoint & materials DUE Friday, 4/20 – 50 pts.
Week 14		
Mon. 4/23 & Wed. 4/25	Teach 2 Debriefing	Analysis Paper/Presentation – 65 pts. Lesson Plan #2 Final Draft – 20 pts. DUE Friday, 4/27
Week 15		
Mon. 4/30 & Wed. 5/2	Work on Portfolios	Reflection 3: Teaching Philosophy DUE Friday, 5/4 – 10 pts.
Final Exam (Portfolio) – DUE: Friday, 5/11/18		