



EDEE 432 SYLLABUS – SPRING 2012

Course Information

1. Course number: EDEE 432
2. Room location: E101
3. Meeting times: Wednesday, 2:00 – 3:30

Instructor Information

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4. Office: BLDG E 108B
5. Office Hours: Monday and Wednesday, 10:00 – 11:00, or by appointment

Textbook Information

Required Text: *Helping Children Learn Mathematics* (9th Edition), Reys, Lindquist, Lambdin & Smith (2009). John Wiley & Sons, Inc.

Course Description & Pre-requisite

Description: This course in elementary school mathematics methods focuses on teaching and learning math in grades K-6. The purpose is to enable teacher candidates to become thoughtful, creative, and effective teachers, through focused inquiry, investigations, and collaborations, all within the context of planning and implementing standards-based mathematics lessons.

Pre-requisite: APTE approval; Completion of MATH 111 and MATH 112 with a grade of C or better. Completion of Block A with a grade of C or higher in all courses.

Co-requisite: EDEE 434 (Science Methods) and EDEE 436 (Block 2 Practicum).

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Course Structure

Domains of Practice

For this course, we will emphasize five domains of teachers' work crucial to becoming a skillful beginning teacher of mathematics:

1. Planning mathematics lessons;
2. Creating meaningful and developmentally appropriate activities to reinforce and extend mathematical learning;
3. Leading a whole class discussion about mathematics;
4. Representing mathematical ideas; and
5. Assessing students' mathematical knowledge, skills, and dispositions.

Principled Practice

Knowing and being skillful with particular teaching practices is only part of what it takes to teach well. Your practice should be guided by *principles*, which are overarching professional commitments, drawn from the values and wisdom of the teaching profession, academic disciplines, and society. These principles are not only useful in guiding interpretation and judgment, but also for helping you make decisions about what to do in specific situations with particular students and content:

1. Attending to the integrity of the mathematics presented to students;
2. Committing to the learning and achievement of all students;
3. Establishing and managing a productive learning environment; and
4. Learning from and systematically improving practice.

They are not separate considerations, but rather an integrated foundation for our work. Our attention to these principles cuts across the four domains of practice. For instance, a teacher who is leading a discussion considers issues about the integrity of the mathematics being discussed, concerns herself/himself with the participation of all of her/his students, attends carefully to the environment, and considers afterwards how well the discussion worked to help students learn. As we study each of the above domains throughout this course, we will continually examine them in conjunction with these four principles.

Course Goals & Objectives

The purpose of this course is to continue your development toward becoming an effective teacher of elementary mathematics, by continuing to assist you in constructing an instructional framework based on research, theory, best practice, and practical experience. Such a framework can be used for understanding and evaluating the educational processes, experiences in field placements, and your experiences after the course is completed.

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Each experience and assignment provides an opportunity for you to grow in your knowledge and skills in teaching math. Building upon the foundation established in EDEE 440, experiences within this course will provide a deeper look into (a) planning & implementing mathematics lessons; (b) leading a whole class discussion about mathematics; (c) representing mathematical ideas; and (d) assessing students' mathematical knowledge, skills, and dispositions.

The course will be guided by the following learning outcomes. Specifically, you will be given opportunities to:

COURSE LEARNING OUTCOMES	ALIGNMENT WITH ACEI STANDARDS	ALIGNMENT WITH HTSB STANDARDS (DIVISION LEARNING OUTCOMES)	ALIGNMENT WITH INSTITUTIONAL LEARNING OUTCOMES
<ul style="list-style-type: none"> examine personal assumptions, beliefs and values about the teaching and learning of elementary school mathematics 	5.1	5a, 5b	4, 5
<ul style="list-style-type: none"> explore, understand, and implement the Common Core Standards for Elementary Mathematics 	2.3	1, 2a & d, 3a - e	5
<ul style="list-style-type: none"> increase theoretical knowledge and practical experience in the planning, teaching and assessment of mathematics 	1, 3.1, 3.2, 3.3, 4	1, 2a & d, 3a - e, 4	1, 2, 5
<ul style="list-style-type: none"> create and implement instructional activities that will improve learning opportunities for all students, regardless of ability, race, gender, ethnicity, and socio-economic status 	1, 3.1, 3.2, 3.3	1, 2a & d, 3a - e	1, 2, 4, 5
<ul style="list-style-type: none"> identify and use a range of resources to support teaching and learning mathematics 	1, 3.1, 3.2., 3.3	3a - e, 5a	5
<ul style="list-style-type: none"> collaborate with peers to research, present and reflect on topics related to teaching 	2.3, 5.1, 5.2, 5.4	5a, b & d	1, 2, 5

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and learning mathematics			
<ul style="list-style-type: none"> reflect on and evaluate teaching and learning of mathematics 	2.3, 4, 5.1, 5.2	4, 5a, b & d	5
<ul style="list-style-type: none"> become more confident in your abilities to do and teach mathematics. 	2.3		

Course Requirements

Attendance and Class Participation:

Attendance is mandatory: If circumstances prevent you from attending class, you must notify me in advance. *You will be allowed one absence throughout the course. Use this absence only in case of an emergency. For each additional absence you will lose 10 points from your course total.*

Class participation: Your participation in class activities and discussions is important not only for your own learning but also the learning of others. Class participation includes the following components: participating in all in-class activities and discussions; collaborating with peers to create and implement a lesson, and write a report; observing, providing feedback for, and reflecting upon learning experiences delivered by peers; and keeping a blog to document your learning in the process. Note that for a significant portion of your participation points, you will be rated by your peers for your contribution to the lesson study (details to be provided in class).

Assignments:

Presentation on Learner Characteristics: As the first step in preparing to create instructional activities that will improve learning opportunities for all students, you must get to know your learners. In collaboration with the members in your grade-level group, you will research the “typical student” within your assigned grade level, and create a Power Point presentation to share this information with your classmates.

Paper on “Making Math Meaningful”: To help you learn what it means to “present mathematical topics to children in ways that are meaningful to them”, to become more familiar with the professional publications and other resources available for teachers of mathematics, and to practice reading these publications with a focus on examining them for useful research, tips, and strategies for improving your teaching practices, you will be required to research and write a paper on ways to make math meaningful, and share your findings with the class.

Planning Lessons: You will create one math lesson plan as part of this course. You should contact your mentor teacher immediately to determine the math topics that will work within her/his scope and sequence. The lesson should incorporate your research on making math

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meaningful.

Math Activity: The aim of this assignment is for you to begin finding activities or games that can be used as lesson “hooks” or to engage students in learning elementary school mathematics in fun and active ways. The activities should take no longer than 10 minutes, and should not only be fun and engaging, but also *relevant* and useful for facilitating mathematical connections and deeper conceptual understanding.

Shoebox Math Activities: Shoebox math activities are intended to be used independently by students, to help them build skills, enhance conceptual understanding or extend learning. For this assignment you will create two shoebox math activities. One of the shoeboxes will be geared toward students who need additional help with a math concept or skill. The other shoebox will be geared toward students who have attained mastery and who would benefit from extended learning opportunities.

Leading a whole class discussion: To develop your skills and moves for leading a whole class discussion, you will plan for a 10-minute discussion about a mathematics concept or a mathematics problem. This discussion can take place during a lesson, or can take place during a separate time, and in a separate setting. You should work with me and/or your mentor teacher to determine an appropriate mathematics concept or problem. As part of this assignment you will be required to lead the discussion within your practicum setting and provide record (either video or transcript) of the discussion. Afterwards, you will write a reflection on your experience (details to be provided).

Teaching a concept with manipulatives: To develop your skills at representing mathematical ideas you will design a 10 minute demonstration/activity using manipulatives to model a standard computational algorithm, or a mathematical concept. This demonstration/activity can take place during a lesson, or can take place during a separate time, and in a separate setting. You should work with me and/or your mentor teacher to determine the appropriate mathematical concept. As part of this assignment you will be required to implement the demonstration/activity within your practicum setting and provide record (either video or transcript) of the demonstration. Afterwards, you will write a reflection on your experience (details to be provided).

Assessing students’ mathematical knowledge, skills & dispositions: To help you develop your skills at eliciting, interpreting, and assessing student thinking, you will design an assessment to appraise mathematical dispositions, conceptual knowledge or skills. This assessment can take place during a lesson, or can take place during a separate time, and in a separate setting. You should work with me and/or your mentor teacher to determine an appropriate assessment. As part of this assignment you will be required to implement the assessment within your practicum setting and provide record (written, video or transcript) of the assessment. Afterwards, you will write a reflection on your experience (details to be provided).

Planning a lesson: As part of a process called “lesson study,” you will create one lesson plan for

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this course, in collaboration with your group members. You should decide which group member will teach the lesson and contact this group member's mentor teacher immediately to determine a topic/area that will work within her/his scope and sequence. The lesson plan should be submitted via the dropbox at least one week prior to teaching the lesson.

Signature Assignment:

Lesson Study Report: The bulk of the work this semester will center on "lesson study," a process which includes planning a lesson, teaching and observing the lesson, debriefing the lesson, and revising the lesson. One member of your group will be required to teach the lesson your group created (see "*Planning a lesson*" above), while the remainder of his/her fellow group members engage in a detailed observation of the lesson. For the signature assignment, you will submit a report that details your lesson study and includes the original lesson plan and a revised lesson plan (details to be provided).

List of Course Requirements and Assigned Point Values:

The following chart contains a list of course requirements and their point values. ***Note that late assignments will not be accepted.*** Please plan accordingly.

Course Requirement	Quantity	Points Possible	Total Points
Paper – Making Math Meaningful	1	40	40
Math Activity	1	25	25
Shoebox Math Activities	2	30	60
Lesson Plan	1	60	60
Signature Assignment	1	100	100
Leading a Whole-Class Discussion	1	40	40
Teaching a Concept w/ Manipulatives	1	40	40
Assessing Student Knowledge	1	40	40
Study Lesson	1	40	60
Signature Assignment – Lesson Study Report	1	100	100
Participation			100
			665

Grading Criteria

Remember: You are a *teacher candidate!* This means the effort you put into your work should reflect the standards of performance you will be expected to meet as a teacher. These include such things as: completion of all requirements, timeliness, meticulous preparation, organization, clear expression and precision.

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Specific details about grading criteria will accompany individual assignments.

Your final grade will be assigned as follows:

Grade	Percentage
A	90% - 100%
B	80% - 89%
C	70% - 79%
D	60% - 69%
F	Below 60%

Taskstream

To aid in the assessment of our program and provide you with a venue for demonstrating your attainment of the standards and showcasing your work, the UHWO Teacher Preparation Program has adopted an electronic portfolio system that is being implemented in TaskStream (<http://www.taskstream.com>). TaskStream is an electronic portfolio, assessment management and performance based instruction tool. As part of the UHWO Teacher Preparation Program, you must submit work from each of your education courses into your electronic portfolio. The assignment you submit from each course will be assessed according to the course-specific rubric in TaskStream. The rubric will address the specific standards that have been aligned with each course's content and expectations. You will be expected to demonstrate competency on each criteria, and may not be allowed to proceed in the program if you receive too many developing or unacceptable ratings.

In addition to the course-specific portfolio you will create based on the standards, your TaskStream account will also allow you to create a separate Presentation portfolio that you can share with potential employers or others to whom you wish to showcase your work. Training opportunities for creating such a portfolio will be offered on campus through the Education Club and are frequently offered online through TaskStream. You are encouraged to save electronic or hard copies of all notable assignments or other work you complete for possible inclusion in a presentation portfolio.

Policies

Academic honesty

Academic dishonesty includes cheating and plagiarism, and is an “impermissible behavior” as stated within the Student Conduct Code of the University of Hawai’i – West Oahu. For the purposes of this class this means the following:

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You may not give or receive unauthorized assistance during homework and exams.
You may not use inappropriate or unallowable sources of information during exams.
You may not misrepresent another's work as being your own. This includes lesson plans that others have created or that you have found on the Internet.

For further information on the Student Conduct code please refer to sections (pp. 17-18) of the UHWO Student Handbook.

UHWO Teacher Education Mission Statement

The University of Hawai'i West O'ahu Teacher Education program is dedicated to its vision of providing innovative teacher preparation programs and public service activities in support of the continuing development of West O'ahu communities. To realize this vision, the mission of the program is to provide teacher candidates with the knowledge, skills, and dispositions necessary to become outstanding educators, especially in the elementary schools located in Central and Leeward O'ahu communities.

UHWO Teacher Education Conceptual Framework

The Conceptual Framework (CF) serves as a guide to fulfilling the UHWO Teacher Education Program vision of preparing highly qualified teachers for entry into the skilled workforce. The program recognizes the contributions of general education, content area studies, and professional studies to the preparation of educators. Three goals underlie the professional studies philosophy and objectives. Candidates for the Bachelor of Education degree in elementary education are committed to the following:

- delivering high quality instruction that addresses the needs of the whole child
- embracing social justice and equity for all
- becoming reflective practitioners and life-long learners.

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