

**Teaching Content/Process: Mathematics Education  
ECED 4263-01; 4263-02**

<b>Semester Hours</b>	3			
<b>Semester/Year</b>	Spring 2016			
<b>Time/Location</b>	Thursdays 11:00-1:30 or 2:00-4:30 EC 249			
<b>Instructor</b>	Dr. Jennifer Edelman			
<b>Office Location</b>	Ed Annex 114			
<b>Office Hours</b>	<b>M/W</b>	<b>T</b>	<b>Tr</b>	<b>By Appointment</b>
	9:00-12:00	2:00-5:00	8:30-9:30	<a href="https://jedelman.youcanbook.me">https://jedelman.youcanbook.me</a>
<b>Telephone</b>	Google Voice: 414-98TEACH Direct Line: 678-839-6184 Department Line: 678-839-6559			
<b>Email</b>	<a href="mailto:jedelman@westga.edu">jedelman@westga.edu</a>			
<b>Online Support</b>	D2L Home Page <a href="https://westga.view.usg.edu/">https://westga.view.usg.edu/</a> D2L UWG Online help <a href="http://uwgonline.westga.edu/students.php">http://uwgonline.westga.edu/students.php</a> D2L 24 hour Help <a href="https://d2lhelp.view.usg.edu/">https://d2lhelp.view.usg.edu/</a> Ingram Library Services <a href="http://www.westga.edu/library/">http://www.westga.edu/library/</a> University Bookstore <a href="http://www.bookstore.westga.edu/">http://www.bookstore.westga.edu/</a>			

**COURSE DESCRIPTION:** Mathematics education content, methods, and materials which are appropriate for the cognitive development of the young child from Pre-K to Grade 5 will be investigated. Students will apply knowledge of content, methods, and materials during field experience. Must be taken concurrently with ECED 4261, ECED 4262, ECED 4283, and READ 3262 or with advisor approval.

Prerequisites: Admission to Teacher Education program and College of Education field experience documentation required.

**COE Vision:** The College of Education at the University of West Georgia will be recognized for *Leading a New World of Learning*, with relevant and innovative programs that contribute to educational improvement and the betterment of society.

**COE Mission:** Locally connected and globally relevant, the Mission of the College of Education is to prepare graduates for meaningful careers in diverse settings. Spanning undergraduate through doctoral study, we are committed to depth of knowledge and excellence in teaching, professional practice, and applied research.

**CONCEPTUAL FRAMEWORK:** The conceptual framework of the College of Education at UWG forms the basis on which programs, courses, experiences, and outcomes are created. With the goal of *Preparing Exemplary Practitioners*, our programs incorporate ten descriptors (knowledgeable, reflective, inquisitive, decisive, adaptive, proactive, leading, collaborative, culturally sensitive, empathetic), clustered into three interrelated and overlapping themes, that demonstrate our commitment to (a) Professional Excellence; (b) Field-Based Inquiry; and (c) the Betterment of Society. These themes and descriptors are integral components of the conceptual framework and provide the basis for developing exemplary practitioners who are prepared to improve schools and communities. National and state standards (ACEI and INTASC) also are incorporated as criteria against which candidates are measured.

The mission of the College of Education is to provide excellence in the initial and advanced preparation of professionals for a variety of settings, to foster an innovative learning community, and to empower a faculty committed to teaching and the dissemination of knowledge. This course’s objectives, activities, and assignments are related directly to the conceptual framework and national standards, as identified below.

**APPROACHES TO INSTRUCTION:** The instructor of this course will employ a variety of instructional strategies in teaching the content of this course. Those strategies include but are not limited to: lecture, student led demonstrations, cooperative learning activities, small group discussion, and the use of manipulatives and other interactive technologies.

This course will be delivered approximately 30% online. This requires the online equivalent of 675 minutes of instruction (seat-time) and an additional 1350 minutes of supporting activities. As such, you will be required to complete the following online activities during this course:

<u>Activity</u>	<u>Instructional Equivalent</u>
Audio/Video instruction	300 minutes
Online assignments	375 minutes

Additionally, it is anticipated that students will need to work independently for twice the number of minutes listed above to complete the online activities.

**COURSE OBJECTIVES**

<i>In teaching this course, it is my goal that you will:</i>	<i>At the end of this course you will be able to:</i>
1. Gain an understanding of how children construct mathematical knowledge and apply their understanding.  <i>InTASC 1, 2, 3, 4, 5, 7; ACEI 1, 2.3</i> <i>Conceptual Framework: Inquisitive, Knowledgeable</i>	<b>Analyze</b> student learning based through formative and summative assessment practices.  <b>Construct</b> models of mathematical knowledge in the areas of number system, arithmetic, geometry, fractions & decimals, measurement, data analysis, probability, ratio & proportion, reasoning, and algebra.
2. Distinguish between conceptual and procedural knowledge in mathematics and prepare plans reflecting each.	<b>Define</b> conceptual knowledge in mathematics.

<p><i>InTASC 1, 2, 4, 5, 7, 8; ACEI 1, 2.3, 3</i></p> <p><i>Conceptual Framework: Decisive, Inquisitive, Collaborative, Culturally Sensitive, Knowledgeable, Proactive</i></p>	<p><b>Compare and contrast</b> conceptual and procedural knowledge in mathematics.</p> <p><b>Evaluate</b> and <b>adapt</b> lesson plans to include appropriate activities to develop both types of mathematical knowledge.</p>
<p>3. Become familiar with strategies to organize content, the classroom environment and children for maximum learning in mathematics and apply these strategies in their planning.</p> <p><i>InTASC 3, 4, 5, 7, 8; ACEI: 1, 2.3, 3, 4</i></p> <p><i>Conceptual Framework: Decisive, Inquisitive, Collaborative, Culturally Sensitive, Knowledgeable, Proactive</i></p>	<p><b>Plan</b> and <b>prepare</b> mathematical activities to engage all learners in the classroom at the appropriate level of mathematical understanding.</p>
<p>4. Identify, describe, reflect on and implement strategies for teaching mathematics; for example problem solving, number sense, spatial sense and geometry, probability, statistics, operations, computations, measurement, and graphing.</p> <p><i>InTASC 1, 2, 3, 4, 5, 7; ACEI: 1, 2.3, 3</i></p> <p><i>Conceptual Framework: Knowledgeable, Reflective</i></p>	<p><b>Evaluate</b> published lesson plans and resources for their effectiveness in teaching the mathematical concepts to all learners in the classroom.</p>
<p>5. Become familiar with examples and materials that reflect other cultures and perspectives.</p> <p><i>InTASC 2, 3, 5, 7, 8, 9; ACEI: 1, 2.3, 3</i></p> <p><i>Conceptual Framework: Decisive, Inquisitive, Collaborative, Culturally Sensitive, Knowledgeable, Proactive</i></p>	<p><b>Define</b> and <b>describe</b> multicultural mathematics practices.</p> <p>Critically <b>examine</b> materials for evidence of biases, stereotypes, and sensitivity to all cultures and backgrounds.</p> <p><b>Prepare and teach</b> a mathematics lesson integrating multicultural resources.</p>

**TEXTS, READINGS, INSTRUCTIONAL RESOURCES, AND REFERENCES**

**Required Text(s)** Schwartz, J. E. (2008). *Elementary mathematics pedagogical content knowledge: Powerful ideas for teachers*. Boston, MA: Pearson Allyn & Bacon.

Other assigned readings will be available through the UWG library and/or CourseDen.

**Required Instructional Resource:** Tk20 Subscription

These are available at the University Bookstore or at <http://westga.tk20.com/campustoolshighered/start.do>. If you have purchased a subscription previously, DO NOT re-subscribe. For more information about this resource, see [http://www.westga.edu/coe/index\\_550.php](http://www.westga.edu/coe/index_550.php).

For assistance, email [tk20@westga.edu](mailto:tk20@westga.edu).

### Course References

- Chambers, D. L. (Ed.). (2002). *Putting research into practice in the elementary grades*. Reston, VA: National Council of Teachers of Mathematics.
- Constantino, P. M., & De Lorenzo. (2002). *Developing a professional teaching portfolio: A guide for success*. Boston: Allyn and Bacon.
- Danielson, C. (1999). *A Collection of Performance Tasks and Rubrics*. New York: Eye on Education
- Fosnet, C. T., & Jacob, B. (2010). *Constructing Algebra*. Reston, VA: National Council of Teachers of Mathematics.
- Greer, B., Mukhopadhyay, S., Powell, A. B., & Nelson-Barber, S. (2009). *Culturally responsive mathematics education*. Florence, KY: Routledge.
- National Association for the Education of Young Children. (2009). *NAEYC Standards for Early Childhood Professional Preparation Programs*. Washington, DC: NAEYC.
- National Council of Teachers of Mathematics. (2001). *Mathematics Assessment 3-5*. Reston, VA: National Council of Teachers of Mathematics.
- National Council of Teachers of Mathematics. (2008). *Navigating through Algebra 3-5*. Reston, VA: National Council of Teachers of Mathematics.
- National Council of Teachers of Mathematics. (2004). *Navigating through Problem Solving Grade 1*. Reston, VA: National Council of Teachers of Mathematics.
- National Council of Teachers of Mathematics. (2004). *Navigating through Problem Solving Grade 2*. Reston, VA: National Council of Teachers of Mathematics.
- National Council of Teachers of Mathematics. (2010). *Navigating through Number and Operations 3-5*. Reston, VA: National Council of Teachers of Mathematics.
- National Council of Teachers of Mathematics. (2000). *Principles and standards for school mathematics*. Reston, VA: NCTM.
- Small, M. (2009). *Good Questions: Great Ways to Differentiate Mathematics Instruction*. Reston, VA: National Council of Teachers of Mathematics.
- State of Georgia. (2012). *Georgia Common Core Performance Standards*.

### ASSIGNMENTS, EVALUATION PROCEDURES, AND GRADING

**Assignments and Course Requirements:** Written assignments are final products that will be graded on both **what** is written (clarity, depth, insight) and **how** it is written (the form of the written work). Therefore, it is crucial to realize that correct grammar and spelling, proper punctuation, neatness, and adherence to assignment guidelines will affect your grade. As an educator, you will be expected to demonstrate high levels of competence not only in verbal but also in written communication with parents, administrators, and other educators. Evaluation of written assignments will be accomplished through rubrics, which will be distributed as assignments are given.

All assignments must be completed in a typed, single-space format, with Arial font, size 11 and 1-inch margins on all sides unless otherwise indicated.

**Assignments are due by 11:59 p.m. on the designated date.** Due dates are listed on the course schedule; full instructions are posted on CourseDen. Assignments are to be typed and submitted to the appropriate dropbox on CourseDen. No work will be accepted in person or via email. Please do not wait until the last minute to upload your assignments; technical/computer issues will not excuse the lateness of the assignment.

**Assignments:** This is a brief overview of how you will demonstrate your learning in this course. Each assignment will have further instructions posted in CourseDen and will be discussed in class. The overall goal for these assignments is to provide you with meaningful activity that will help you reflect on and improve student learning and your teaching practices.

1. Professionalism and Participation (*Course Objectives 1, 2, 3, 4, 5*)
  - Reading: It is expected that you will access and read all required readings before the day they appear on the course schedule. Each reading will have an activity designed to show that you have read and understood the assignment.
  - Of course, to participate in class activities you need to be present. You are allowed one absence; subsequent absences will affect your participation grade. If there are extenuating circumstances, please contact the instructor.
  - Each week will contain an online component of the course. You are expected to complete all activities by 11:59 PM on the Thursday we meet.
2. Knowledge Packages (*Course Objectives 1, 2, 3, 4*)
  - This assignment will give you practice in thinking about mathematics concepts from the point of view of a teacher. You will analyze mathematical concepts; determine what is important for students to know, to be able to do, and how to assess their understanding.
3. Targeted Observations (*Course Objectives 1, 2, 3, 4, 5*)
  - We will use targeted observations in your field experience classroom as preparation for edTPA task 4. You will observe your cooperating teacher and students, write up your observations, and analyze his/her teaching and student learning in mathematics.
4. Multicultural Mathematics Microteach (*Course Objectives 1, 2, 4, 5*)
  - You will work with a small group to select a children’s literature book or game that illustrates a mathematical concept through a multicultural lens. You will write up and teach a lesson based on the materials that you select. After teaching, you will reflect on your teaching and the students’ learning.
5. Final exam or course portfolio (*Course Objectives 1, 2, 3, 4, 5*)
  - You will have the opportunity to demonstrate your competence in meeting the course objectives either through a written, application based final exam or through a course portfolio. This will be discussed in the first weeks of class and we will come to consensus on a decision as to which path we are going to take.

**Evaluation Procedures**

Assignment	Weight	Assessment Tools	Due Date
Participation & Professionalism	10%	Rubric	Thursdays, in-class
Knowledge Packages	20%	Rubric	See course outline
Targeted Observations	25%	Rubric	See course outline
Multicultural Mathematics Microteach	25%	Rubric	The day you teach
Final Exam or Course Portfolio	20%	Rubric	See final exam schedule on UWG Registrar’s webpage

**Grading**

90% and above = A  
 80-89% = B

70-79% = C  
 69% or less = F

**CLASS, DEPARTMENT, AND UNIVERSITY POLICIES**

Please carefully review the information at [Common Language for Course Syllabi](#). It contains important information related to your rights and responsibilities in this class. Because these statements are updated as federal, state, university, and accreditation standards change, you should review the information each semester. In addition to the above information the following policies apply to this course.

Academic Honesty: All work completed in this course must be original work developed this semester. Students are expected to adhere to the highest standards of academic honesty. Plagiarism occurs when a student uses or purchases ghostwritten papers. It also occurs when a student utilizes ideas or information obtained from another person without giving credit to that person. If plagiarism or another act of academic dishonesty occurs, it will be dealt with in accordance with the academic misconduct policy as stated in the latest *Student Handbook* and the *Graduate Catalog*.

Americans with Disabilities Act: The official UWG policy is contained in the link to the [Common Language for Course Syllabi](#) located on the Provost's website. All students are provided with equal access to classes and materials, regardless of special needs, temporary or permanent disability, special needs related to pregnancy, etc. For more information, please contact Disability Services at the University of West Georgia: [http://www.westga.edu/studentDev/index\\_8884.php](http://www.westga.edu/studentDev/index_8884.php).

Attendance: You are allowed one "no questions asked" absence without penalty. Attendance is calculated as part of your participation and professionalism grade. *Arriving 15 or more minutes late and/or leaving 15 or more minutes early will count as an absence.*

Extra Credit: Extra credit will not be available in this course. Please do your best work on the assigned activities.

Late Work: If your assignment is turned in on time (11:59 PM on the due date listed on the course calendar), you will have the opportunity to earn a score of "3" on the rubric. Additionally, on-time submissions will receive detailed comments and feedback and have the opportunity to revise and resubmit as long as a true effort has been made on the assignment. Late submissions that are turned in within two weeks of the due date will not have the "revise and resubmit" option and are limited to a score of "2" on the rubric. After two weeks, the work will not be accepted.

Professional Conduct: As teachers you have made a commitment to the education profession. As such, you should conduct yourself at all times in a professional manner. You will demonstrate your professionalism through the following behaviors:

*Attendance and punctuality*: Much of the value of the course will be through the experiences that occur during our class sessions. You must be present to learn, and to contribute to the learning of others. Missing class sessions, arriving late to class and/or leaving early will negatively impact your professionalism grade for the semester.

*Active participation*: To learn anything more deeply, you must actively participate in it. The pedagogy being advocated and modeled through our course is the belief that our students must commit to, and be involved actively in, the problems and situations being posed. Be involved. Developing collegial, supportive relationships is an important aspect of the teaching profession.

*Use of laptops, cell phones, tablets, etc.:* Teachers must learn to manage and incorporate technology in their classrooms. We will use laptops, cell phones, and tablets for specific course-related activities (e.g., composing notes, using math applets/excel/or other tools, looking up information as necessary, preparing mini-presentations). In general, you should not engage in web browsing, email, or other questionable unrelated activities during class time. Texting is not a course-related activity unless we are using Poll Everywhere.

Student Email Policy: The official email policy is contained in the link to the Common Language for Course Syllabi located on the Provost's website. Please use the email function in CourseDen to contact your instructor. See the flowchart for response times on the final page of this syllabus for more information.

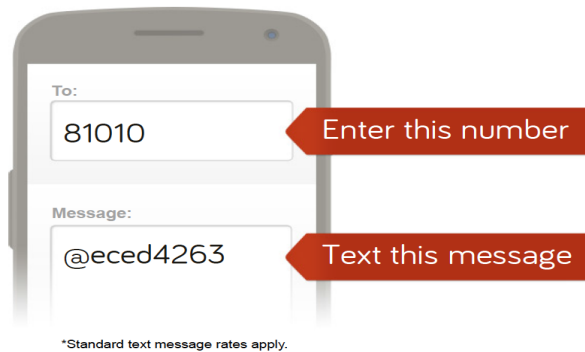
UWG Cares: If you or someone you know is in a distressing situation, support is available at <http://www.westga.edu/UWGCares/> The website contains access to helpful resources and phone numbers related to emergency or crisis situations and safety concerns, medical concerns, multicultural, psychological and personal issues and interpersonal conflict.

J. Edelman would like you to join ECED4263!



To receive messages via text, text **@eced4263** to **81010**. You can opt-out of messages at anytime by replying, 'unsubscribe @eced4263'.

Trouble using 81010? Try texting **@eced4263** to **(678) 890-5472** instead.



Or to receive messages via email, send an email to **eced4263@mail.remind.com**. To unsubscribe, reply with 'unsubscribe' in the subject line.



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