MATH 509: Teaching Algebraic Thinking in the Elementary Grades
MATH 539: Teaching Algebraic Thinking in the Middle Grades
Spring 2021 Course/Independent Study

Course Description:
NCTM Standards based instruction practices that promote algebraic thinking in the middle grades.

Course Goals:
• Build an understanding of equivalence, patterns and functions, variables, and graphing;
• Link algebraic thinking instruction to arithmetic instruction;
• Incorporate manipulative materials, technology (graphing calculators, computers, etc.), familiar contexts, and problem-solving experiences;
• Emphasize connections among arithmetic, geometry and algebra; and
• Establish a classroom atmosphere that stimulates and supports students’ learning.

Instructor: Dr. Shelly M. Jones
Office: Maria Sanford
Office Phone: (860) 832-2857
Email: jonessem@ccsu.edu
Meeting times: Selected Wednesdays 4:30 – 7:10 pm
Office Hours:
Monday 1:00 – 2:00 pm
Tuesday 11:00 AM – noon (In my office or online)
Tuesday 6 – 7 pm
Wednesday 2:00 – 4:00 PM
Note: Please inform me if you intend to join me for office hours in my WebEx Personal Room

Shelly Jones's Personal Room
https://ccsu.webex.com/meet/jonessem
648808755
Join by video system
Dial jonessem@ccsu.webex.com and enter your host PIN .
You can also dial 173.243.2.68 and enter your meeting number.
Join by phone
1-650-479-3208 Call-in number (US/Canada)
1-877-668-4493 Call-in toll-free number (US/Canada)
Access code: 648 808 755

Textbooks:
Lessons for Algebraic Thinking, Lawrence, Ann and Charlie Hennessy, Math Solutions Publications, Sausalito, CA 2002

Navigating through Algebra in Grades 6-8, Friel, Susan and Sid Rachlin, Dot Doyle with Claire Nygard, David Pugalee and Mark Ellis, NCTM Principles and Standards for School Mathematics Navigations Series, Reston, Virginia 2001
Additional Resources:
NCTM website: http://www.nctm.org

University Policies:
1. If you need course adaptations or accommodations because of a disability, if you have emergency medical information to share with me, or if you need special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible. My telephone numbers and office hours are given above.
2. In the event of a weather emergency that requires curtailment or cancellation of classes, listen to WTIC (1080 AM) or call 832-3333 for the "general snow message."
3. Last day to withdraw is April 19. Withdrawal forms are available in the Enrollment Center, Willard Hall. Cessation of attendance, notice to the instructor, or telephone calls to the Enrollment Center are not considered official notice of a student's intention to withdraw from the course.

Evaluation: Your grade for this course will be based on the following:

Attendance and Class Participation: 20%
You are expected to attend selected asynchronous class meetings and participate fully in class discussion and activities with your classmates.

Midterm Content Exam: 15%

Online Discussion(s) 05%

Revise Math Tasks to be CR Math Tasks 05%

Research Project: 30%
Culturally Relevant Math Research including writing Community Math Stories

Written Assignment: 25%
Scholarly Article (to be submitted to referred journal)
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<thead>
<tr>
<th>Week</th>
<th>Textbook Topic</th>
<th>Assignment/Homework</th>
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| Jan. 27 | Introduction to Independent Study and Culturally Relevant Math Research (I will complete the IRB Process)  
Ch. 1, Patterns and T-Charts | Read Chapters 2-4, practice math problems  
Ch. 2, Functions and Graphing  
Ch. 3, Surprising Squares  
Ch. 4, Personalized Patterns |
| Feb. 3 | Review the math from Chapters 2-4 in break out rooms (2-3 Facilitation Leaders) | Read Chapters 5-7, practice math problems  
Ch. 5 Go Figure  
Ch. 6 Bulging Backpacks  
Ch. 7, Who Finishes When? |
| Feb. 10 | Review the math from Chapters 5-7 in break out rooms (2-3 Facilitation Leaders) | Read Chapters 8-10  
Ch. 8 – Stretching Slinkies  
Ch. 9, Condo Challenge  
Ch. 10, The Window Problem |
| Feb. 17 | Review the math from Chapters 8-10 in break out rooms (2-3 Facilitation Leaders) | Read scholarly articles on culturally relevant pedagogy |
| Feb 24 | Dr. Jones presentation on Culturally Relevant Pedagogy | Revise an algebra task using the CRCD Math Task Rubric and Revising a math task template. |
| Mar. 3 | Online Discussion about revising a math task to be CR | |
| Mar. 10 | Discuss projects  
Explore the Global Math Stories website | Revise algebra problems to be culturally relevant |
| Mar. 16 | Review of math content for midterm exam | |
| Mar. 24 | **Midterm Exam taken synchronously** | |
| **March 31, April 7, April 14, April 21:** | Research project with your students using CR math tasks.  
Meet with Dr. Jones as needed  
Writing a Community Math Story  
Writing the research results | |
| Apr. 28 | Project Presentations (Community math story and/or revising a math task and then implementing the CR math task with your students) | |
| May 5 | Project Presentations (Community math story and/or revising a math task and then implementing the CR math task with your students) | |
| May 12 | Scholarly Article Due (We can work on this together or you can do on your own) – I imagine an article of how our class revised and implemented CR Math tasks with our students. This could include a Community Math Story/Lesson | |
Statement on Discrimination and Harassment
Central Connecticut State University strives to maintain our campus as a place of work and study for faculty, staff, and students that is free of all forms of prohibited discrimination and harassment based upon age; ancestry, color; gender identity and expression; intellectual disability; learning disability; mental disorder; physical disability; marital status, national origin; race; religious creed; sex, (including pregnancy, transgender status, sexual harassment and sexual assault); sexual orientation; or any other status protected by federal or state laws. Any student who has concerns should contact the Office of Diversity and Equity (ODE) at 860-832-0178, Student Affairs at 860-832-1601, or his/her faculty member. The ODE is located on the main floor of Davidson Hall, Room 102.

Sexual Misconduct, Intimate Partner Violence and Stalking
Option 1. Central Connecticut State University is committed to providing a learning and working environment that emphasizes the dignity and worth of every member of its community. Sexual harassment (including sexual assault) in any form will not be tolerated. "Sexual harassment" means unwelcome sexual advances, requests for sexual favors, and/or other verbal or physical conduct of a sexual nature. Such conduct has the purpose or effect of unreasonably interfering with an individual's work or academic performance or creating an intimidating, hostile, or offensive working or academic environment in any University activity or program. For additional information, please consult the CCSU policies at http://www.ccsu.edu/diversity/policies/index.html. All faculty members and staff have a duty to report incidents of sexual harassment including sexual violence to Nancy "Rusty" Barcelo, Interim VP for Diversity, Inclusion, and Equity, Office of Diversity and Equity, Davidson Hall, 102.

Option 2. Central Connecticut State University (CCSU) will not tolerate sexual misconduct against students, staff, faculty, or visitors in any form, including but not limited to: sexual assault, sexual exploitation, sexual harassment or stalking, as defined in CCSU policies. For additional information, please consult the CCSU policies at http://www.ccsu.edu/diversity/policies/index.html. All faculty members and staff have a duty to report incidents of sexual harassment including sexual violence to Nancy "Rusty" Barcelo, Interim VP for Diversity, Inclusion, and Equity, ODE, Davidson Hall, 102.

To file a report, contact: Diversity and Equity (860-832-0178); Student Affairs (860-832-1601); Student Conduct (860-832-1667); or the University Police (860-832-2375).

For support and advocacy contact: Office of Victim Advocacy & Violence Prevention (Diloretto Hall 305) at 860-832-3795 to speak with Joanna Flanagan {jflanagan@ccsu.edu}; Student Wellness Services at 860-832-1925 (confidential); the Women's Center at 860-832-1655, the local YWCA's Sexual Assault Crisis Services Hotline at 860-223-1787 (confidential) and Prudence Crandall Center for Domestic Violence (confidential) at 888-774-2900 (24-hour hotline).