Course Details
MATH 543 Structure of Mathematics I: Number Systems, 3 Credits
- Sections 543-01, Online Synchronous
  - Official Meeting Time: TR 4:30 - 5:45 pm
- Tentative schedule can be found here.

Professor Information
Dr. Melissa Gunter
- Email: mgunter@ccsu.edu
- Office: Marcus White Hall Room 120 and WebEx room
- Office Hours: T 9:00 - 11:30 am
  W 1:30 - 3:00 pm
  R 9:00 - 10:30 am
  and by appointment

Course Description
- Intended for in-service secondary school teachers and pre-service graduate certification students. Major objective is to broaden and deepen teacher's knowledge of the algebra topics encountered in secondary schools with particular emphasis on topics new to the curriculum and the uses of technology in teaching them. Opportunities will be provided to discuss the NCTM standards and their implications for teachers.

Required Course Materials
- Access to the course website (in Blackboard) and working email

Course Goals
- Work to:
  - Make sense of problems and persevere in solving them
  - Reason abstractly and quantitatively
  - Construct viable arguments and critique the reasoning of others
  - Model with mathematics
  - Use appropriate tools strategically
  - Attend to precision
  - Look for and make use of structure
  - Look for and express regularity in repeated reasoning
- Deepen understanding of mathematical concepts by working to:
  - Develop and use problem solving strategies
Central Connecticut State University
Department of Mathematical Sciences Fall 2020

- Develop number concepts and operations with extensive use of manipulatives
- Encourage mathematical discourse through cooperative learning and written communication
- Experience and learn mathematics content through constructivist pedagogy

For this Course
- The last day to withdraw from this course and receive a grade of “W” is Monday, April 19, 2021. After April 19th, withdrawals are allowed only under extenuating circumstances and require approval of the course instructor and department chair (in that order).
- You must take the final examination at the time specified for your section. The final examination times for MATH 543-01 is Tuesday, May 11 5:30 - 7:30 pm.

University Policies
- Student Disabilities Services
  - Central Connecticut State University provides reasonable accommodations in accordance with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act for students with documented disabilities on an individualized basis.
  - If you are a student with a documented disability, and would like to request academic accommodations, you are encouraged to contact Student Disability Services (SDS) at 860-832-1952, or email disabilityservices@ccsu.edu. Please visit the SDS website at http://www.ccsu.edu/sds/ to download an Intake form and documentation requirements. Once approved, SDS suggests that students discuss their approved accommodations with their professors, as well as any other additional medical emergency needs. Temporary impairments may also qualify for accommodations. Please note that accommodations are not retroactive and must be requested each semester.
  - Please contact me privately to discuss your specific needs if you believe you need course accommodations based on the impact of a disability, medical condition, or if you have emergency medical information to share. I will need a copy of the accommodation letter from Student Disability Services, Willard- Room 201 in order to arrange your class accommodations. Student Disability Services maintains the confidential documentation of your disability and assists you in coordinating reasonable accommodations with faculty.

- Weather Emergencies
  - In the event of a weather emergency which requires the cancellation of classes, listen to WTIC (1080 AM) or call (860) 832-3333 for the "general snow
Central Connecticut State University  
Department of Mathematical Sciences Fall 2020

message”. You can also check the CCSU Website. Please check your class email before you head to campus.

● **Academic Integrity**
  ○ You are responsible for understanding and abiding by the University’s policy on academic integrity. The Department of Mathematical Sciences rigorously enforces this policy. Academic Integrity is the responsibility a student assumes for honestly representing all academic work. All students are expected to demonstrate integrity in the completion of their coursework. Academic integrity means doing one's own work and giving proper credit to the work and ideas of others. It is the responsibility of each student to become familiar with what constitutes academic dishonesty and plagiarism and to avoid all forms of cheating and plagiarism. Students who engage in plagiarism and other forms of academic misconduct will face academic and possibly disciplinary consequences. Academic sanctions can range from receiving a zero for the assignment, quiz, test or final exam to a failing grade for the course. From a disciplinary standpoint, an Academic Misconduct Report may be filed and a Faculty Hearing Board may impose sanctions such as probation, suspension or expulsion.
  ○ For further information on academic misconduct and its consequences, please consult the Student Code of Conduct (http://www.ccsu.edu/StudentConduct/codeofconduct.asp) and the Academic Misconduct Policy (http://www.ccsu.edu/AcademicIntegrity/).

● **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 Equity and Inclusion (OEI) at 860-832-0178, Student Affairs at 860-832-1601, or their faculty member. The OEI is located on the main floor of Davidson Hall, Room 119.

● **Sexual Misconduct, Intimate Partner Violence and Stalking**
  ○ 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 policy at https://www.ccsu.edu/diversity/policies/index.html. All faculty members and staff have a duty to report incidents of sexual harassment including sexual
misconduct, intimate partner violence and stalking to Pamela Whitley, Title IX Officer, Office of Equity & Inclusion, Davidson Hall, 119.

○ To file a report, contact: Equity & Inclusion (860-832-1652), Student Conduct (860-832-1667) or Student Affairs (860-832-1601). For criminal complaints, contact the University Police (860-832-2375).

○ For support and advocacy, contact: Office of Victim Advocacy at 860-832-3795 or jflanagan@ccsu.edu; Student Wellness Services at 860-832-1945 (confidential); 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).

Evaluation and Grading Criteria

● All assignments are to be turned in at the beginning of class time on the days they are due. If they are not turned in at the beginning of class, they are considered late. Assignments that are up to one week late will be deducted by 20% of the possible points; assignments that are up to two weeks late will be deducted by 50% of the points possible. You will receive no credit for assignments that are more than two weeks late. All course assignments must be complete for you to receive a grade for the course.

● You are responsible for attending and participating in each class opportunity. If we believe that people construct their own understanding from their experiences (and we do), you must be present for the experience! If you miss class, it is your responsibility to get information from a classmate or contact the instructor so that you can be prepared for the next class period.

● Grading Scale:

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Percentage</th>
<th>Point Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>$p \geq 93$</td>
<td>558 - 600</td>
</tr>
<tr>
<td>A</td>
<td>$90 \leq p &lt; 93$</td>
<td>540 - 557</td>
</tr>
<tr>
<td>B+</td>
<td>$88 \leq p &lt; 90$</td>
<td>528 - 539</td>
</tr>
<tr>
<td>B</td>
<td>$83 \leq p &lt; 88$</td>
<td>498 - 527</td>
</tr>
<tr>
<td>B-</td>
<td>$80 \leq p &lt; 83$</td>
<td>480 - 497</td>
</tr>
<tr>
<td>C+</td>
<td>$78 \leq p &lt; 80$</td>
<td>468 - 479</td>
</tr>
<tr>
<td>C</td>
<td>$73 \leq p &lt; 78$</td>
<td>438 - 467</td>
</tr>
</tbody>
</table>
Assignment Descriptions:

- **Weekly Reading Discussions.** *(70 points – 5 points each)* You are expected to engage in weekly discussions by creating your own response to the prompt and replying to your classmates. Students must engage fully with each activity to receive the maximum benefit to their learning. **There are no make-up activities for discussions.**

- **Article Critiques.** *(100 points – 50 points each)* You will be required to read, summarize, and critique two recent journal articles from a recent copy of *The Mathematics Teacher*, *Teaching Mathematics in Middle School*, or *Mathematics Teacher: Learning and Teaching PK-12*. At least one of these articles must be centered around the use of technology in the mathematics classroom; the mathematical topic of these articles should be related to teaching algebra. You may submit them in any order.

- **Hands-On Activity Reflections.** *(90 points - 30 points each)* You will be required to find three hands-on activities related to the teaching of algebraic concepts in middle or high school. These activities may be found using a number of resources, including the internet, textbooks, lesson plan resource books, etc. Once you find an activity that you feel might be possible in your own classroom, you should write up a reflection that considers: what you like about the activity, what concepts and procedures the activity would help your students obtain, how the activity would require your students to use mathematical reasoning, which CCSSM standards the activity is focused upon, and how you might implement the activity in your own classroom. **Be specific** about any changes you might make before using the activity, and explain your rationale for doing so. Please submit the activity along with your reflection. You may not use an activity for this assignment that has been demonstrated in class, unless *you* are the person who demonstrated it.

- **Activity Demonstration.** *(40 points)* You will be required to present an activity that is related to the teaching of algebraic concepts in middle or high school during classtime. This activity is to focus on a specific algebraic concept that you would like to teach using any hands-on materials. The objective of this project is that you will need to plan and execute an activity that you will be able to use in your own mathematics classroom.
These lessons will be incorporated into regular instruction as appropriate. Ideas for Activity Demonstrations are listed in *italics* on our course schedule, but you may suggest an idea that has not been listed. Some concepts listed may have two or more activities that focus on different concepts within that topic, so it is possible for there to be multiple presentations on one topic.

- **Assessments.** *(100 points – 50 points each)* Two assessments will be given during class time – a midterm assessment and a final assessment. Each assessment will consist of mostly open-ended questions. **No make-up assessments will be given** except in the case of an extreme emergency, in which case documentation will be required.

- **Final Project.** *(200 points – see detail below)* The final project is one that we will work on throughout the semester. Students will either:
  - Write up an activity that has been used in your own classroom in the form of a short, practitioner article for submission to a journal of your choice (the new publication from NCTM or ATOMIC’s newsletter, for example); **this option is for students who are in-service teachers.**
  - Write up a very detailed, edTPA-style lesson plan for a complete lesson you might use in your future classroom. In addition, you will complete a separate reflection about this lesson very similar to one completed for an Activity Reflection (and as such cannot be the same one you use for one of those); **this option is for students who are not yet in-service teachers.**

There will be three checkpoints throughout the semester to ensure adequate progress is being made.

  - **Checkpoint 1 (20 points)** At this checkpoint, students should have a general idea about a concept/objective they’d like to focus on. Those submitting articles should have a journal or other publication in mind.
  - **Checkpoint 2 (25 points)** This is the halfway point of the semester. As such, a rough draft of the article/LP should be provided. Peer reviews will be done at this stage by an assigned partner.
  - **Checkpoint 3 (25 points)** At this point, a rough draft will be provided for peer review by the rest of the class, to guide and inform the final draft.
  - **Final Draft (130 points)** Once you have considered feedback from your peers, the final draft of article/LP will be turned in at the end of the semester. Those students completing articles should also provide evidence that it has been submitted for publication.