**CTSE 7520 Syllabus, Spring 2021**

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| **Instructor Information**  W. Gary Martin  [martiwg@auburn.edu](mailto:martiwg@auburn.edu); 334.599.3141 | **Class Meetings**  Tuesdays, 5:00 – 8:00 PM  Haley 5075 or via Zoom |

1. **Course Number:** CTSE 7520, Spring 2021

**Course Title:**  Curriculum and Teaching – Mathematics Education

**Credit Hours:** 3 Semester Hours

1. **Date Syllabus Prepared:** January 2021
2. **Textbooks/Major Resources:** *(starred items are required for purchase)*

Association of Mathematics Teacher Educators. (2017). *Standards for preparing teachers of mathematics*. Author. <https://www.amte.net/standards>

American Mathematical Association of Two-Year Colleges. (2018). *IMPACT: Improving Mathematical Prowess And College Teaching*. Author. <https://amatyc.org/mpage/IMPACT>

Loucks-Horsley, S., Styles, K., Hewson, P. (1996). Principles of effective professional development for mathematics and science education: A synthesis of standards. *NISE Brief, 1*(1). <https://www.researchgate.net/publication/242656472_Principles_of_Effective_Professional_Development_for_Mathematics_and_Science_Education_A_Synthesis_of_Standards>

Mathematical Association of American. (2017). *Instructional practices guide.* <https://www.maa.org/programs-and-communities/curriculum%20resources/instructional-practices-guide>

\*National Council of Teachers of Mathematics. (2014). *Principles to actions: Ensuring mathematical success for all*. Author. <https://www.nctm.org/Store/Products/Principles-to-Actions-(Download)/>

National Council of Teachers of Mathematics (1996). *Professional standards for teaching mathematics*. Author. <http://www.nctm.org/flipbooks/standards/professionalteaching/html5/index.html>

\*Smith, M. S. & Stein, M. K. (2018). *5 practices for orchestrating productive mathematics discussions* (2nd ed.). National Council of Teachers of Mathematics. <https://www.nctm.org/Store/Products/5-Practices-for-Orchestrating-Productive-Mathematics-Discussions,-2nd-edition-(Download)/>

1. **Course Description:** Nature of learners and of knowledge and implications for building curricula and planning instruction in mathematics education. (AU Bulletin)
2. **Course Objectives:** Student will:

* Become acquainted with the latest research on “best practices” in mathematics teaching and underlying theories.
* Become a more effective and reflective mathematics education practitioner.
* Apply principles of effective mathematics teaching with multiple audiences.
* Develop skills for effective leadership in mathematics education.

1. **Tentative Course Content and Schedule:**

| **Date** | **Topic** | **Major Assignments due** |
| --- | --- | --- |
| 12-Jan | Course overview |  |
| 19-Jan | Establishing mathematical goals |  |
| 26-Jan | Selecting and implementing effective tasks |  |
| 2-Feb | Facilitating mathematical discourse |  |
| 9-Feb | Cont. |  |
| 16-Feb | AU Wellness Day; no class |  |
| 23-Feb | Posing purposeful questions | Proposal for issue brief |
| 2-Mar | Using and connecting representations |  |
| 9-Mar | Supporting productive struggle |  |
| 16-Mar | Building procedural fluency | First draft of issue brief |
| 23-Mar | Elicit and use evidence of student thinking |  |
| 30-Mar | Equitable teaching practices |  |
| 6-Apr | Mathematics education leadership | Applications of teaching paper |
| 13-Apr | Cont. | Professional Work Sample (if required) |
| 20-Apr | Course wrap-up | Issue brief |
| 29-Apr | **Final Exam** | Final exam |

1. **Course Requirements/Evaluation:** A letter grade will be assigned, taking into account the following activities, with the weight for each area given in parentheses.

**A. Participation in Course Activities (30%)**: Students are expected to attend and participate fully in all course activities.

* Students should attend and participate in all class meetings. All assigned readings and activities should be completed prior to the class meeting.
* Participate in sample mathematics instruction, including presenting lessons to the class.
* Students will be periodically asked to reply to specified prompts in an on-line discussion forum.
* Topics will be periodically assigned for which students will be expected to prepare a presentation to the class. Unless otherwise specified, a slide deck should be prepared in advanced, including relevant references.

Evaluation of these activities will be conducted on an on-going basis, with feedback provided on any areas in which improvement is needed.

**B. Reflection on Teaching (25%)**: Each student should maintain a journal related to the teaching of a specified mathematics class.

* The class might be a regular teaching assignment in a K-12 school, a postsecondary mathematics class, or a mathematics education class. If the student does not have a regular teacher assignment, this might be a class the student visits on at least a weekly basis, a tutorial situation which meets at least once per week, or another approved mathematics-related learning environment.
* Entries should be made on at least a weekly basis. An informal writing style is acceptable; however, references should be made to course materials and discussions. The entries for a week should total at least 1-2 pages, single spaced.
* At least two lessons should be video- or audio-recorded at two points in the semester – one will be at the beginning of the semester, and the other at the end of the semester. These recordings should be accompanied by an extended reflection in the student’s journal. (Note that the recording is for your use only and does not need to be shared.)
* The journal should be maintained electronically in a form that can be accessed by the instructor.

Evaluation of the journal will be conducted on an on-going basis, with feedback provided on any areas in which improvement is needed.

**C. Formal Papers (30%):** There are 2-3 products in this category. The first two are required of all students. The third is optional but may be required for students completing advanced certification in Alabama (A or AA). The lengths and weights of the papers will be adjusted accordingly. A rubric will be provided for each paper.

1. Paper exploring applications of effective mathematics teaching for a particular audience to be agreed upon with your instructor.

* A formal paper should be submitted, following APA style, approximately 5-10 pages in length, including reverences.
* You will give two presentations – the first based on your formative explorations, and the second presenting your final conclusions.

1. Issue brief exploring some aspect of mathematics teaching about which you want to learn more.

* The topic should be approved in advance.
  + Note that the topic should not be recycled from previous courses, although new aspects of previously addressed topics might be explored.
  + This topic may build on some aspect of the paper on applications of effective mathematics teaching but should not duplicate it.
* Upon approval of the topic, student will conduct a literature search. High-quality sources should be included, including reports from empirical studies. The final section of the paper should address implications of this literature for practice as well as further research.
* A formal paper should be submitted, following APA style, approximately 10-15 pages in length, including references. You will be invited to submit a draft prior to final submission, after which no revisions will be accepted.
* A final, formal presentation of the paper will be given at the end of the semester.

1. A formal reflection following the Auburn University Secondary Mathematics Graduate-level “Professional Work Sample” (PWS) format.

**D. Final Examination (15%):** The final exam will consist of “short response” items that can be answered in a paragraph and “long response” items that require 1-2 pages to answer. All items will be based on class readings and class discussions, with a focus on synthesizing and analyzing the information that has been covered across the course.

1. **Class Policy Statements:**

* **Attendance.** Each student is expected to attend all classes as scheduled (whether on-line or virtual) and participate in all class discussions and activities. Unavoidable absences must be documented and cleared with the instructor in advance if possible. The second non-approved absence from class and each succeeding unapproved absence from class will result in a lowering of the student's final grade by one letter grade.

Students are also expected to attend all scheduled field experiences. An unexcused absence may also lead to action as a violation of the Standards of Professional Conduct, as outlined below, with resulting actions impacting their continuation in the program.

* **Late Assignments.** Any assignment that is submitted after the announced due date will have one letter grade deducted from it per day late. Students should reach out to their instructor immediately to discuss any concerns. It is the student’s responsibility to contact the instructor if assignment deadlines are not met. Students are responsible for initiating arrangements for missed work.
* **Make-up Policy.** Students who miss scheduled exams will need to contact the instructor and turn in the valid excuse within 48 hours from the time that the exams were given. The makeup exam schedule is determined by the instructor and will need to be done within ONE week (5 work days) from the time that the exams were given. Students who miss the makeup without valid excuses will get zero on the exam. Valid excuses include: 1) illness documented by a physician, 2) evidence of personal or family emergency, and  3) official university excuses.

The format, questions and difficulty-level of make-up exams are not guaranteed to be the same as the normal exam, which are at the discretion of the instructors. Students are not allowed to choose the make-up dates or formats on their own.

* **Unannounced Quizzes.** The instructor may give unannounced quizzes as deemed necessary, to be included as a part of the exam score.
* **Faculty Communication and Feedback.** Any communications should be directed to the instructor’s Auburn email address. Responses will be provided within 24 hours whenever possible. If students have concerns about communication or feedback, they should always contact their instructor first. Students should explain their concerns as clearly as possible without judgment or emotion. Effective communication is an important skill, and every interaction in their program is an opportunity to develop this skill.

***Your Auburn University email address is the university-approved form of communication between instructors and students.*** Please ensure that your notifications are set correctly to ensure timely delivery. Additionally, it is your responsibility to read course announcements sent by your instructor. These are posted in Canvas, and you can configure your notification preferences to receive an email each time a new announcement is posted.

* **Diversity Statement.** All people have the right to be addressed and referred to in accordance with their personal identity. Many people might go by a name in daily life that is different from their legal name. In this classroom, we will refer to people by the names that they go by. Pronouns are a way to affirm someone's identity. They are simply a public way in which people are referred to in place of their name (e.g. "he" or "she" or "they" or "ze" or something else). In this classroom, you are invited to share what pronouns you go by, and we will refer to people using the names and pronouns that they share.
* **Accommodations.** Students who need accommodations are asked to electronically submit their approved accommodations through AU Access and to arrange a meeting during office hours the first week of classes, or as soon as possible if accommodations are immediately needed. If you need accommodations but have not established them, make an appointment with the Office of Accessibility, 1228 Haley Center, 334-844-2096.
* **Academic Integrity.** Auburn University has adopted an Honor System proposed by its students and faculty to promote academic integrity and has enacted the following code:

*“We, the faculty, instructors, and students of the (University course here) pledge to fulfill our mutual responsibilities to each other and the academic community at large with honor and integrity in order to build and maintain a climate of respect and trust that will enhance our research, teaching, and learning. We will support the Honor System of the School, and will not tolerate activities that undermine academic integrity.”*

Academic dishonesty is an offense that will be reported to the Academic Honesty Committee. Please refer to the following document for further information regarding academic honesty: [Auburn University Student Academic Honesty Code](https://sites.auburn.edu/admin/universitypolicies/policies/academichonestycode.pdf)

* **Standards of Professional Conduct.** As faculty, staff, and students interact in professional settings, they are expected to demonstrate professional behaviors as defined in the College’s conceptual framework. These professional commitments or dispositions are listed below:
  + - Engage in responsible and ethical professional practices
    - Contribute to collaborative learning communities
    - Demonstrate a commitment to diversity
    - Model and nurture intellectual vitality

Students will be asked to sign a contract affirming Standards of Professional Conduct for the secondary mathematics program. Failure to comply with those standards may lead to actions including dismissal from the lab experience, the course, and/or the Secondary Mathematics Education Program.

* **Students are encouraged to provide feedback on their experiences in the course using AU eValuate.**

**COVID Related Policies**

*Due to the Coronavirus pandemic, public health measures have been implemented across Auburn’s campus. Students should stay current with these practices and expectations through the campus reentry plan,*[*A Healthier U*](https://ahealthieru.auburn.edu/)*. The sections below provide expectations and conduct related to COVID-19 issues.*

* **Health and Participation in Class**: You are expected to complete your Healthcheck screener daily.

Your health and safety, and the health and safety of your peers, are my top priorities. If you are experiencing any symptoms of COVID-19, or if you discover that you have been in close contact with others who have symptoms or who have tested positive, you must follow the instructions on the Healthcheck app. My hope is that if you are feeling ill or if you have been exposed to someone with the virus, you will stay home to protect others.

Please do the following in the event of an illness or COVID-related absence:

* + - Notify me in advance of your absence, if possible.
    - Provide me with medical documentation, if possible.
    - Keep up with coursework as much as possible.
    - Participate in class activities and submit assignments remotely as much as possible.
    - Notify me if you require a modification to the deadline of an assignment or exam.
    - Finally, if remaining in a class and fulfilling the necessary requirements becomes impossible due to illness or other COVID-related issues, please let me know as soon as possible so we can discuss your options.

Students with questions about COVID-related illnesses should reach out to the COVID Resource Center at (334) 844-6000 or at [ahealthieru@auburn.edu](mailto:ahealthieru@auburn.edu).

* **Health and Well Being Resources:** These are difficult times, and academic and personal stress is a natural result. Everyone is encouraged to take care of themselves and their peers. If you need additional support, there are several resources on campus to assist you:
  + COVID Response Team (http://[ahealthieru.edu](http://www.ahealthieru.edu/))
  + Student Counseling and Psychological Services (<http://wp.auburn.edu/scs/>  )
  + AU Medical Clinic (<https://cws.auburn.edu/aumc/> )

If you or someone you know are experiencing food, housing or financial insecurity, please visit the Auburn Cares Office (<http://aucares.auburn.edu/>)

* **A Healthier U Campus Community Resources:** We are all responsible for protecting ourselves and our community. Please read about student expectations for fall semester, including completing the daily GuideSafe™ Healthcheck (<https://ahealthieru.auburn.edu/>).

You are expected to (1) take your temperature daily and (2) complete your Healthcheck screener to receive your A Healthier U pass. **You may be asked at any time during class to show your pass.**

**Course Expectations Related to COV-19**

* **Face Coverings**: As a member of the Auburn University academic community you are required to follow all university guidelines for personal safety with face coverings, physical distancing, and sanitation. Face coverings are required in this class and in all campus buildings. Note that face coverings must meet safety specifications, be worn correctly, and be socially appropriate.

You are required to wear your face coverings at all times. If you remove your face covering or are non-compliant with the university’s [policy on face coverings](https://ocm.auburn.edu/news/coronavirus/updates/20200618-face-masks-required.php?ref=coronavirus), you will be instructed to leave the classroom and will be held to the protocols outlined in the [Auburn University Policy on Classroom Behavior](https://sites.auburn.edu/admin/universitypolicies/Policies/PolicyonClassroomBehavior.pdf). Any student who willfully refuses to wear a face covering and does not have a noted accommodation may be subject to disciplinary action.

* **Physical Distancing**: Students should observe appropriate physical distancing and follow all classroom signage/avoid congregating around doorways before or after class. If the instructional space has designated entrance and exit doors, you should use them. ***Students should exit the instructional space immediately after the end of instruction to help ensure social distancing and allow for the persons attending the next scheduled class session to enter.***
* **Course Attendance**: If you are quarantined or otherwise need to miss class because you have been advised that you may have been exposed to COVID-19, you will be expected to develop a plan to keep up with your coursework during any such absences.
* **Course Meeting Schedule**: This course might not have a traditional meeting schedule in Spring 2021. Be sure to pay attention to any updates to the course schedule as the information in this syllabus may have changed. Please discuss any questions you have with me.
* ***Disruptive or concerning classroom behavior involving the failure to wear a face covering, as directed by Auburn University, represents a potential Code of Student Conduct violation and may be reported as a non-academic violation. Please consult the***[***Classroom Behavior Policy***](https://sites.auburn.edu/admin/universitypolicies/Policies/PolicyonClassroomBehavior.pdf)***.***

**Course Delivery Changes Due to COV-19**

Please be aware that the situation regarding COVID-19 is frequently changing, and the delivery mode of this course may adjust accordingly. In the event that the delivery method is altered, please be assured that the learning goals and outcomes of the course will not change; however, some aspects of the course will change in terms of the mode of delivery, participation, and testing methods. Those details will be shared via Canvas as soon as possible. Please be prepared for this contingency by ensuring that you have access to a computer and reliable Internet.

Should your assigned instructor be unable to provide the necessary instruction for this class, responsibility for the instruction of this class will be assumed by:

Dr. Marilyn E. Strutchen, Professor of Mathematics Education  
[strutme@auburn.edu](mailto:strutme@auburn.edu)