Department of Mathematics, Computer & Information Sciences
MA 452 Methods in Teaching Mathematics w/Field Experience
Fall 2022 Syllabus

1	Instructor	Dr. Candace Carter Stevens
2	Email	ccarter@msvu.edu
3	Phone	662.254.3398
4	Office	CRB 140 (FLW Math & Science Building)
5	Classroom	ONLINE or CRB 104
6	Student Engagement Hours	**Office Hours** Monday: 8:00-11:00 (office), 12:00-1:00 (wconline) Wednesday: 8:00-10:00 (office), 12:00-1:00 (wconline) Friday: 8:00-10:00 (office), 12:00-1:00 (wconline) Email is a good way to get in contact with me, provided the email is professional and courteous. Include in the subject of the email your name, ID, and the day/time of your class.
7	Course Description	This course is designed for secondary Mathematics Majors. Emphasis is on developing teaching styles, and gaining information on psychological and learning theoretical foundation for teaching mathematics. Teaching models and strategies are explored and modeled in class presentations. Students are required to plan lessons, micro-tech, and solve problems involving classroom management, and learning to develop relationships with school personnel and community. **Prerequisites:** Undergraduate level ED 201 Minimum Grade of C
8	Course Outcomes	This course will enable a student to: 1. Describe some of the results derived from NAEP and TIMSS data and the implications of those results. 2. Locate Mississippi College and career readiness standards 3. Label MS CCR standards 4. Describe the five process skills associated with doing mathematics and explain how they are developed in the secondary and middle school programs. 5. Describe each of the six principles in National Council of Teachers of Mathematics (NCTM) Principle and Standards (*Equity, Curriculum, Teaching, Learning, Assessment and Technology*) and explain the importance of each principle to the teaching and learning of mathematics. 6. Discuss research conducted in mathematics education, and how it can impact trends in curriculum, teaching and assessment. 7. Explain school mathematics 8. Know strategies to encourage student engagement and proficiency in mathematics 9. Compare/Contrast (Formative & Summative Assessment)— 10. Describe the factors that need to be considered when writing a math unit plan. 11. Describe the essential components of lesson plan/lesson design. 12. Micro-teach mathematics lessons (K-12 and MVSU) 13. Solve problems involving classroom management 14. Develop relationships with school personnel (K-12) and community.

<table>
<tr><td>9</td><td>Major Areas of Study</td><td>Service-learning, which includes early field experiences, is an integral component of the academic course experience. Students will be engaged in activities that address the needs of the classroom teacher together with structured opportunities designed to promote students learning. Reflection and reciprocity are key concepts of service-learning.</td></tr>
<tr><td>10</td><td>Recommended Course Material</td><td>Recommended Text(s):

Brahier, D. J. (2013). Teaching secondary and middle school mathematics. (4th. Ed.). Boston: Allyn and Bacon.

Mississippi College and Career Readiness Standards (CCRS)
https://districtaccess.mde.k12.ms.us/curriculumandInstruction/Mathematics%20Resources/MS%20CCSSM%20Framework%20Documents/2016-MS-CCRS-Math.pdf

Secondary/Supplemental Resources:
We will also read some articles from Mathematics Teaching in the Middle School (MTMS) and the Mathematics Teacher (MT), two journals published by NCTM, as well as other journal articles. Once assigned, please print course readings and bring them to class.

Several supplementary texts, Mississippi Mathematics Framework, the Internet and education software used in elementary/middle school math classes will also be incorporated into the content of this course.

Thumb drive. Please bring one regularly in order to transfer files. Unfortunately we cannot count on Cloud and Box access in our classroom. You may also bring your laptop to class if you have one.</td></tr>
<tr><td>11</td><td>Grade Distribution</td><td>☐ Your points will be assigned as follows:
<table>
<tr><td>CATEGORY</td><td>HOMEWORK</td><td>QUIZZES</td><td>MIDTERM</td><td>EXAMS (1 & 3)</td><td>FINAL EXAM</td><td>TOTAL PERCENTAGE</td></tr>
<tr><td>PERCENT</td><td>20%</td><td>20%</td><td>15%</td><td>20%</td><td>25%</td><td>100%</td></tr>
</table>
☐ Your final grade for the course will be assigned as follows:
<table>
<tr><td>Grade</td><td>A</td><td>B</td><td>C</td><td>D</td><td>F</td></tr>
<tr><td>Point Range</td><td>90-100</td><td>80-89</td><td>70-79</td><td>60-69</td><td>0-59</td></tr>
</table>
☐ OVERALL GRADES will be posted to CANVAS.</td></tr>
<tr><td>12</td><td>HOMEWORK</td><td>☐ Graded homework assignments will be assigned for each section and are administered in CANVAS.
☐ You must complete homework by the due date to obtain full credit. However, homework can be completed after due date until the end to the semester with a 30% late deduction.</td></tr>
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13	Tests	There are four tests (Exam 1, Midterm, Exam 3, Final Exam). **All tests, including the final exam, are conducted online.** You may use a calculator during tests. **There is only one (1) attempt on each test so please be sure that your internet is working properly before starting.**
14	Final Exam	The final exam is mandatory. A course grade of F will be assigned to any student who fails to take the final exam. The final exam is normally conducted the last week of summer school. The final exam is a comprehensive examination. Students *should not* bring personal items (backpacks, cell phones, etc…) to the testing area. However, students should bring two (2) pencils and a calculator (optional).
15	Calculator	The TI-84 is the recommended calculator for this course.
16	3 x 5 Index Card	You may use one 3 x 5 index card for Exams 1 & 2
17	Crawl-Walk-Run	This course adheres to a Crawl_Walk_Run pedagogical model. a. Crawl: students read the section prior to the lecture so they are prepared for the lecture. b. Walk: students actively participate and therefore actively learn during lectures c. Run: students achieve content mastery by re-working the in-class problems, studying, and successfully completing assignments. d. Assess: tests provide students the opportunity to demonstrate their mastery of the material. To be successful, students must not skip any phase of the Crawl_Walk_Run Pedagogical Model.
18	Lectures / Class Attendance	It is imperative that students attend all lectures. Lectures will serve as the foundation for the assigned homework and tests. All lectures will be given face-to-face. However, in the event that classes are held virtually due to COVID-19, then lectures will be given via Big Blue Button CONFERENCES (CANVAS). Students should attend (face-to-face) in class lectures / login (online) to CANVAS/CANVAS @ least 150 minutes per week with the exception of holidays. Failure to do so may result in a decrease in your overall grade by a letter grade.
19	Canvas	Throughout the semester, the instructor will send e-mail pertaining to the course through Canvas. Canvas e-mail is the official outside-of-class method of communication. Please check Canvas regularly. Students are responsible for any communication the instructor sends via Canvas e-mail. The course syllabus, assignments, lecture notes and announcements will be posted to Canvas
20	CANVAS LEARNING	***Although some assignments will be given on CANVAS----- ALL OF YOUR GRADES WILL BE POSTED ON CANVAS (NOT CANVAS).*** **So, if you want to know your grade in the class, then check your CANVAS progress report on a regular basis.** The graded assignments are located in the CANVAS .

21	Technical Problems	☐ Internet access is required to reach CANVAS. ☐ The MA 452 course work can be done on your personal computer which may pose a risk and is beyond the instructor's control. Technical problems such as power outages, CANVAS account issues, internet unavailability, etc. happen. However, *YOU are responsible for submitting your work to my online gradebook by the due dates.* ☐ **Therefore, Do Not wait until the last minute to complete your assignments. Technical problems are not an acceptable excuse for work that has not been completed by the due date**. *Canvas Instructure products support the current and previous major releases of the following browsers:* ☐ ***Chrome** 102 and 103* ☐ ***Firefox** 101 and 102 (Extended Releases are not supported*)* ☐ ***Edge** 102 and 103* ☐ ***Respondus Lockdown Browser** (supporting the latest system requirements)* ☐ ***Safari** 14 and 15 (Macintosh only)* *You can verify that the browser you are currently using is up to date by using the browser checker tool in the link below.* *https://community.canvaslms.com/t5/Canvas-Basics-Guide/What-are-the-browser-and-computer-requirements-for-Canvas/ta-p/66* *Important note: If you need help downloading one of these browsers, The Online and Distance Education Staff will be happy to help you. Submit a helpdesk ticket by emailing DistanceEd@mvsu.edu. Please use your MVSU email address to submit your helpdesk ticket. You can also receive assistance by calling 662-254-3913 or 662-254-3624.* ☐
22	Late Assignments	☐ No late assignments will be accepted. ☐ You must have submitted homework online via CANVAS by the due date and time. ☐ Late submission due to technical issues, forgetting, etc. etc., will not be accepted. Email submissions will not be accepted. ☐ ALSO: Please do not ask your instructor IF the lowest assignments will be dropped -- the instructor will let you know if the lowest scores are indeed dropped on homework and quizzes. ☐ ALL EXAMS/Presentations/Lesson Plans AND THE FINAL PROJECT WILL COUNT; NONE OF THESE ARE DROPPED.
23	Make-up policy	☐ There will be no extensions for homework and quiz assignments. You have a wide window to complete the assigned homework and quizzes - no exceptions will be made. ☐ **There will be no make-up tests provided.** However, students who exams/presentations, due to a serious verifiable circumstance, the zero exam/presentation grade will be replaced with the next test/presentation grade (see Replacement Policy). ☐ Students who must miss work due to official University business must make other arrangements beforehand.

24	Replacement Policy	☐ **Zeros** due to an unexcused absence or academic misconduct **will not be replaced.** ☐ Students who miss an exam but have an official university excuse must turn in and supporting documents within **two days of missed work.** ☐ The missed exam will be replaced with the next exam grade once the instructor verifies the excuse.
25	Academic Honesty	☐ All forms of academic dishonesty are prohibited at MVSU. A comprehensive description of academic dishonesty and the sanctions available to the professor are described in the MVSU Student Handbook. ☐ **Students found cheating, in any manner, will be face disciplinary actions.**
26	Students with Disabilities	☐ Students having any special needs (handicaps, problems, or any factors that may affect their performance in class or require special instructional strategies) should make these special needs known to the instructor during the **first week** of the course. ☐ The student should meet with instructor to ensure access of available resources in the university and make appropriate instructional modifications. ☐ **Mississippi Valley State University is committed to providing reasonable accommodations for students with a documented disability. If a student has a disability that qualifies under the Americans with Disability Act (ADA) and requires accommodations, he/she should contact the Services for Students with Disability Office to obtain this service. Disabilities covered by the ADA may include learning, physical, psychiatric, vision, hearing, or chronic health disorders. Students who are uncertain if their condition/disability is qualified should contact the SSD Office**. ☐ For more information or to schedule an appointment, please contact: **Mrs. Kathy Brownlow, ADA Coordinator** **Mississippi Valley State University** **Office for Disability Accommodations** **Social Science Building Office 105** **Telephone: 662-254-3443 Email: kbrownlow@mvsu.edu**
27	Disclaimer	☐ **This document does not constitute a contract with the university. It contains guidelines and I reserve the right to make changes on this syllabus as needed.**
28	BIBLIOGRAPHY	Lobato, J., & Ellis, A. B. (2010). *Developing essential understanding of ratios, proportions & proportional reasoning*. Reston, VA: National Council of Teachers of Mathematics [NCTM]. **NOTE**: This is available at www.nctm.org, and you can get the e-book or the hard copy. Smith, M. S., & Stein, M. K. (2011). *Five practices for orchestrating productive mathematics discussions*. Reston, VA: NCTM. See NOTE above. NCTM (2000). *Principles and standards for school mathematics (PSSM).* Reston, VA: NCTM. Please sign up for a free 120-day trial access to *PSSM*; go to http://standardstrial.nctm.org/triallogin.asp . This will give you access sufficient for our class. If you join NCTM, you also gain access to an online teaching journal of your choice and to discounted prices on books, such as the two above. A student membership is $39. Go to www.nctm.org ; click on membership and then on student e-membership. Jackiw, Nicholas. (2001). The Geometer's Sketchpad, Version 5 (computer program, GSP). Emeryville, CA: Key Curriculum Press.

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<tr><td></td><td></td><td>Lemov, D. (2010), Teach Like a Champion: 49 Techniques that Put Students on the Path to College. Jossey-Bass. ISBN: 978-0-470-55047-2

Horn, I.S. (2012), Strength in Numbers- Collaborative learning in secondary Mathematics. NCTM. ISBN: 978-0-87353-663-9
http://www.illustrativemathematics.org/

InTasc Model Teaching Standards
http://www.ccsso.org/Documents/2011/InTASC_Model_Core_Teaching_Standards_2011.pdf

Boaler, J. (2008). What's math got to do with it?: Helping children to love their least favorite subject – And why it's important for America. New York: Penguin Books.

Brahier, D. (2009). Teaching Secondary and Middle School Mathematics (3rd Ed.). Allyn & Bacon.

Smith, M.S. & Stein, M.K. (2011). 5 practices for orchestrating productive mathematics discussions. Reston, VA: NCTM.

Tsuruda, G. (1994). Putting It Together: Middle School Math in Transition. Portsmouth, NH: Heinemann.</td></tr>
<tr><td>29</td><td>Course Outline</td><td>
<table>
<tr><th>Week</th><th>Dates</th><th>Topic</th><th>Assignment</th></tr>
<tr><td>1</td><td>08/22-8/26</td><td>Introduction to Class
Syllabus
What is Methods of Teaching Math?
Mississippi CCR Standards
Pre-Quiz</td><td>8/22
Classes Begin
☐ Late Registration Fee - $100.00 Assessed</td></tr>
<tr><td>2</td><td>8/29- 9/2</td><td>➢ Describe results derived for TIMSS data
➢ Describe results derived for NAEP data
➢ Summarize five ways to support the diverse learners in our mathematics classrooms.
➢ Differentiate between procedural and conceptual knowledge.</td><td>**Initial Self Assessment*** DUE 9/2</td></tr>
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		3	9/5-9/9	➢ Describe the five process skills associated with doing mathematics and explain how they are developed in the secondary and middle school programs.	**9/5 MONDAY Labor Day Holiday- NO CLASS** *****Article Critique Due 9/9**
		4	9/12-9/16	➢ Describe the six principles in the *Principles and Standards* ➢ Explain how the principles can be used to help mathematics teachers define an ideal mathematics programs ➢ Compare and contrast traditional mathematics teaching with one that embraces the six principles	**9/13 Financial Clearance** *****FRIDAY, September 16** **EXAM 1**
		5	9/19-9/23	➢ Differentiate between behaviorist and constructivist learning ➢ List four common observations about how children learn as characterized by Piaget, Bruner, and Dienes and differentiate among them. ➢ Summarize recommendations for helping children make sense of mathematics as based on these observations about how children learn.	**9/14** ➢ Learning Theorist Project
		6	9/26-9/30	➢ Explain what a state or local course of study is as well as what it generally contains. ➢ Explain the process by which a state or local course of study is written. ➢ Explain the difference between a goal and an objective ➢ Describe Bloom's Taxonomy and provide examples illustrating the levels at which objectives are written.	**9/30 ***Article Critique Due**
		7	**10/3-10/7 Midterm Exam Week**	➢ Describe the essential components of lesson plan/lesson design.	**10/3** Lesson Plan Topic 1 Due

				➢ Describe the factors that need to be considered when writing a unit plan.	*****, October 5 Midterm, EXAM 2*****
		8	10/10-10/14	➢ Explain how assessment differs from testing or evaluation. ➢ Describe the four purposes of assessment as outlined by the Assessment Standards. How do these purposes relate to you as a teacher? ➢ When looking at procedural knowledge, explain what should be assessed in addition to skills proficiency? Why? ➢ Explain the difference between scoring and grading. What is the purpose of each? ➢ Describe the how students can be involved in understanding and using rubrics to help with their learning.	
		9	10/17-10/21	Lesson Planning (2 hours) 1. What strategies encourage student engagement and proficiency? 2. Student Motivation 3. Compare/Contrast (Formative & Summative Assessment)--several alternative assessment strategies available to teachers beyond the traditional tests, quizzes and homework assignments.	**10/19** Lesson Plan 1 Due Lesson Plan 2 Topic Due
		10	10/24-10/28	Presentations Field Experiences (1 hour)	

11	10/31-11/4	Lesson Planning (1 hour) Field Experiences (1 hour)	**11/2 Wednesday Lesson Plan 2 Due**
12	11/7-11/11	Presentations Field Experiences (1 hour)	
13	11/14-11/18	Lesson Planning (1 hour) Field Experiences (1 hour)	
14	11/21-11/25	**FALL BREAK/ THANKSGIVING HOLIDAY**	
15	11/28-12/2	Presentations Field Experiences (1 hour)	**11/30 *Unit Plan Due * 12/2 Final Self-Assessment Due Reading Days**
16	12/5-12/9	FINAL EXAM WEEK	**TBA**

Article Critiques (Due 9/9 & 9/30) on a Mathematics Teaching in the Middle School or Mathematics Teacher article: Write a critical reflection on an article from either of these NCTM journals. The article should be recent (published within the last 7 years) and address the topic of choice. In your reflection, give a summary of the main point(s) of the article, describe the mathematical thinking involved in any activity presented, address the strengths and weaknesses of the article, and tell what you have learned from it. Your reflection should be at least 2 double-spaced pages.

Initial and Final Self-Assessment (DUE: 8/26 & 12/2)

At the beginning and completion of the course, you will complete a self-assessment of your progress as a mathematics educator – providing a starting point at the beginning of the course and then checking in at the end of this course. You will answer the following prompts for your initial self-assessment: Type a 1-2 page (single-spaced) self-assessment about your thoughts and beliefs, as well as your own practices related to math and teaching mathematics. The following bullets are meant to help guide your thinking:

 Describe your past experiences with mathematics teaching and learning (Particular emphasis should be placed on positive (and not so positive) experiences as a student in middle and high school mathematics classrooms).

 Include an explanation/description of what drew you to become a math teacher, what you expect your teaching will look like/what kind of math teacher you would like to be, what you would like to keep in mind as you prepare for teaching your own mathematics class

 What are your goals in taking this class?

 What made you decide to take MA 452? Why focus on mathematics?

 What are your feelings related to teaching mathematics? How do these build on or are they altered by prior experiences?

 How do you plan to teach in your classroom?

 How do you address issues related to equity in your classroom?

 How do you see this class possibly changing your teaching practice?

 Is there anything in particular that you would like to see, read, or do in this class this semester?

 Are there particular needs of yours that I should be aware of/take into account?

 Other questions, comments, concerns.