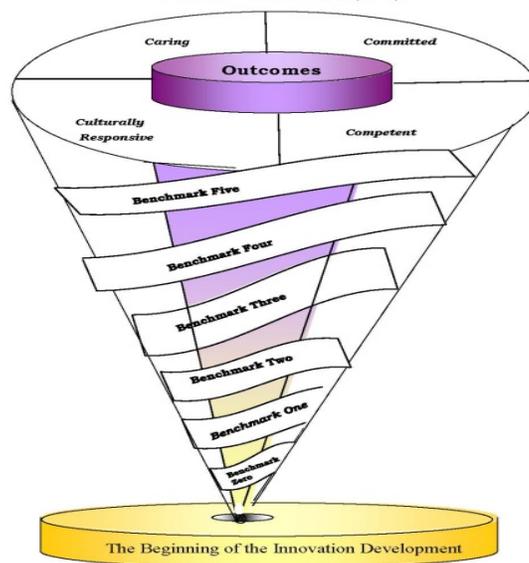


LANE COLLEGE

JACKSON, TENNESSEE 38301

COURSE SYLLABUS

METHODS OF TEACHING SECONDARY MATH MAT 331



Department of Education

Instructor:

Office Location:
Office Hours:
Email:
Credit hours: 3

Course Meeting Days:
Course Location:
Phone:

Course Description: This course is designed for students who plan to certify in secondary education. This course focuses on methods, materials, the use of technology in those methods and materials, and concerns related to the subject area.

Required Textbook(s)/Resources

All students are required to purchase the following texts:

- 1) Huetinck, Linda and Munshin Sara N., *Teaching Mathematics for the 21st Century: Methods and Activities for Grades 6-12*. Pearson, 3rd edition, 2008. ISBN-13: 978-0-13-228142-3
- 2) Smith, M.S. & Stein, M. K. (2011). *5 Practices for Orchestrating Productive Mathematics Discussions*. NCTM: Reston, VA. ISBN: 978-0-87353-677-6
- 3) Mathematics for Secondary School Teachers by Bremigan, Bremigan, and Lorch, ISBN # 978-0-88385-773-1.

Additional Sources:

National Council of Teachers of Mathematics (2000). Principles and standards for school mathematics. Reston, VA: Authors.

National Council of Teachers of Mathematics (2001). Navigating through Algebra in Grades 9-12. Reston, VA: Authors.

National Council of Teachers of Mathematics (2001). Navigating through Geometry in Grades 9-12. Reston, VA: Authors.

National Council of Teachers of Mathematics (2003). Navigating through Data Analysis in Grades 9-12. Reston, VA: Authors.

National Council of Teachers of Mathematics (2004). Navigating through Probability in Grades 9-12. Reston, VA: Authors.

National Council of Teachers of Mathematics (2001). Navigating through Algebra in Grades 6-8. Reston, VA: Authors.

National Council of Teachers of Mathematics (2002). Navigating through Geometry in Grades 6-8. Reston, VA: Authors.

National Council of Teachers of Mathematics (2003). Navigating through Data Analysis in Grades 6-8. Reston, VA: Authors.

National Council of Teachers of Mathematics (2003). Navigating through Probability in Grades 6-8. Reston, VA: Authors.

Software/Tools:

Graphing calculator, Geogebra software/The Geometer's Sketchpad software, Microsoft Excel.

Vision Statement

The Department of Education is committed to the preparation of 21st century teachers who understand the complexities of learning and teaching that encompass inclusion, equity, and social justice. This work is enhanced by a liberal studies foundation that encourages breadth of knowledge, interdisciplinary and international perspectives, engaged inquiry, and intellectual curiosity. We strive to prepare teacher candidates to possess the 4 C's; Caring, Committed, Culturally Responsive, Competent and who possess the deep knowledge in their field of study and work collaboratively to achieve high quality education for all.

The organizing theme of the Department of Education is "teachers as innovators". We strive to help our candidates build and construct new methods, ideas and strategies for meeting the challenging and diverse needs of today's students.

Student Learning Outcomes for MAT 331

Upon the completion of course requirements, student will be able to:

1. Demonstrate an understanding of secondary school students and how they learn mathematics. (InTASC S1, S2).
2. Demonstrate competency in planning activities that incorporate a broad understanding of mathematical learning outcomes. (InTASC S4, S5, S6, S7, S8).
3. Plan and implement instruction based on state standards and the National Council of Teachers of Mathematical Standards. (InTASC S4, S5, S6, S7).
4. Understand, choose, develop, and use effective means of assessing individual learner's performance and knowledge. (InTASC S4, S5, S6, S7).
5. Choose, develop, and utilize appropriate curriculum and activities based on assessment of the individual learners. (InTASC S4, S5, S6, S7).
6. Choose, develop, and utilize inquiry-based, problem-centered activities. (InTASC S3, S7, S8).
7. Evaluate, select, and implement instructional materials and resources, including technology, as appropriate. (InTASC S7, S8).
8. Become involved in appropriate professional organizations to deepen their knowledge of mathematics and maintain current knowledge of developments in mathematics education. (InTASC S9, S10).

OVERARCHING UNIT GOALS

Unit Operations Goals

- Meet state and national standards for the Unit.
- Ensure the excellence of all licensure programs in the Unit.
- Respond to the needs of the regional and state-wide teaching community.

Unit Program Goals

- Meet the state and national standards relevant to the various programs.
- Meet the Unit Goals for candidates through the various programs.
- Continue to build strong partnerships with stakeholders.

Unit Candidate Goals

- Candidates demonstrate knowledge of the depth, breadth, and interdisciplinary connections inherent in the specialty area discipline studied.
- Candidates are knowledgeable of subject matter in order to create meaningful learning experiences for all learners.
- Candidates develop skills necessary for self-reflection and uses this reflection to support student learning and development.
- Candidates demonstrate professional dispositions in varied educational settings with regard to a diversity of students and all members of the school community.

Standards

After completion of this course, teacher candidates will be able to demonstrate proficiency in the following: Interstate New Teacher Assessment and Support Consortium (InTASC) standards, Lane Department of Education (DOE) Conceptual Framework standards, Tennessee Literacy Standards and CAEP standards:

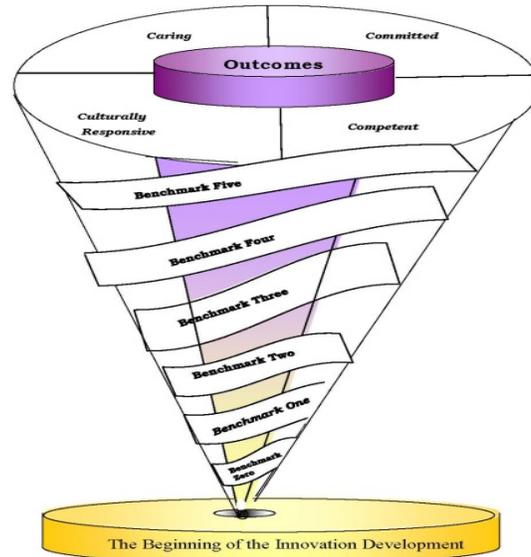
CONCEPTUAL FRAMEWORK

Description of the Conceptual Framework

A graphic schema was constructed to incorporate the department of education's Conceptual Framework. The six ribbons in the schema symbolize our benchmarks. Each benchmark provides information regarding how our teacher candidates matriculate through the program. The top of the spiral represents the expectations held by faculty that graduates will be caring, committed, competent and culturally responsive urban educators. The faculty uses the acronym 4C's to refer to the spiral construction model.

(Endorsement in Elementary Education K-5)

Teachers as Innovators (4C's)



21 DOE Proficiencies

Proficiencies are organized into three categories, with proficiencies for committed and culturally responsive educator combined in one category.

(K) Knowledge

(S) Skill

A List of Candidate Proficiencies

A competent educator:

1. demonstrates knowledge of the content that is being taught, and is able to assist students in the process of mastering content through the use of research-based practices; **(K)**
2. demonstrates the capacity to problem solve, and to think critically and reflectively; **(K)**
3. demonstrates an understanding of human development, and the ability to act on this understanding; **(S)**
4. demonstrates an understanding of classroom organization, planning, and management and the ability to act on this understanding; **(S)**
5. demonstrates an understanding of learning as a socially mediated, constructive process, and the ability to act on that understanding; **(S)**

6. demonstrates an understanding of effective communication and collaboration strategies; **(K)**
7. demonstrates an understanding of research, assessment and evaluation as ongoing processes involving multiple sources of information and techniques; **(K)**
8. demonstrates an understanding of the importance of involving families, communities, and colleagues in the education of all children, and the ability to act on this understanding; and **(S)**
9. demonstrates knowledge of current technology in educational practice, and the ability to apply it in a classroom or school setting. **(S)**

A committed and culturally responsive educator:

10. acts on the belief that *all* children can learn and creates instructional opportunities that adapt to learners from diverse cultural backgrounds and with exceptionalities; **(K)**
11. demonstrates an understanding of the urgency to accommodate the nature and needs of each learner, and is able to act on this understanding; **(S)**
12. demonstrates a commitment to high moral and ethical values; and **(K)**
13. assumes accountability for the outcomes of instruction, and continually validates the effects of his/her choices and actions on others. **(S)**
14. values and appreciates cultural differences within a classroom or school setting, and is able to apply an understanding of cultural and linguistic diversity to the design and implementation of instruction. **(K)**

A caring educator (dispositions)

15. understands the right of *all* students to have access to a curriculum that allows them to develop to their full potential, and is able to act as an advocate for students in this respect;
16. maintains confidentiality;
17. demonstrates appropriate behaviors during class settings and in the work environment. The candidate has been alert and responsive, consistently.
18. demonstrates respect for the profession;
19. demonstrates punctuality in arrival to class, practicum, student teaching, field experience meetings, etc.
20. demonstrates the ability to compromise and to respect others' opinions during group work;
21. participates in professional development activities that were recommended.

Council for the Accreditation of Educator Preparation (CAEP) Standards

Standard #1: Content and Pedagogical Knowledge

Standard #2: Clinical Partnerships and Practice

Standard #3: Candidate Quality, Recruitment, and Selectivity

Standard #4: Program Impact

Standard #5: Provider Quality Assurance and Continuous Improvement

Interstate Teacher Assessment and Support Consortium (InTASC) Standards

Standard #1: Learner Development
Standard #2: Learning Differences
Standard #3: Learning Environments
Standard #4: Content Knowledge
Standard #5: Application of Content
Standard #6: Assessment
Standard #7: Planning for Instruction
Standard #8: Instructional Strategies
Standard #9: Professional Learning and Ethical Practice
Standard #10: Leadership and Collaboration

Brief Description of Graded Assignments

A brief introduction to each of the listed assignments is below. Detailed descriptions of the major assignments will be provided later in class. In course MAT 331, you will be required to complete and master several Unit and Key Assessments. The Unit assessments are the Perceptual Instrument and Disposition Instrument. The Links from the LCAS system will be provided to you at the beginning of this course.

Required Assessments:

- Assessment of secondary mathematics learners' mathematical knowledge project(s) Development and implementation of lesson plans
- Demonstrate an impact on learning (implementing lesson plans, pre/post test to show growth)
- Comprehensive final exam
- Professional dispositions
- Additions to the electronic portfolio
- Mathematics Notebook

Other Assignments Determined by the Instructor:

- Professional readings and reading responses
- In-class participation and discussion
- Class assignments
- Quizzes
- Unit exams

Exams (30%): There will be 3 exams given during the semester each counting worth 10% of your course average. The content of the exams comes from the material

presented in the course through readings (text and additional readings), test exercises, assignments, in-class notes, and in-class activities.

Final Exam (20%): A comprehensive final exam will be given at the time schedule by the registrar.

Teaching/Implementing Lessons (20%): Individually, you will perform model lessons. The lessons will include an assessment component (pre-test and post-test). At least one lesson must include a technology component. Individually, you will prepare and hand in a typed lesson plan that would permit someone else to do the same thing you were planning to do. Instructions should be written out for each activity and the complete set of questions, sentences, etc. should be included. Keep a copy for yourself, post a copy to your electronic portfolio, and turn one into the instructor at the time of your lesson. You will be evaluated on how well your plan is organized and how well you implement your written lesson plan.

Mathematics Notebook (10%): You will complete a mathematics notebook. The Mathematics Notebook will consist of four sections aligned to the 2012 NCTM Standards. Each section includes evidence of candidate mastery over the standards. You will defend the notebook during a seminar presentation before a juried faculty panel. Additional details will be provided in a separate handout.

Quizzes/Reading Responses (10%): You will have weekly quizzes and/or reading responses about the readings and/or class discussions.

Professional Readings and Article Critiques (10%): You will select an article for a peer-reviewed journal about a topic appropriate for course objectives. You will complete the assignment per the requirements below. You will also lead a small class discussion about the article you selected.

Article Critique Requirements:

- . (1) Summary. What is the article about? What is the author trying to communicate to the reader? Be sure to state the author's main argument and main points. Try to do this in no more than five or six sentences. A good test is showing your summary to somebody who has not read the article; if they read the summary and can tell you what the article is about, you are probably on the right track.
- . (2) Praise. What does the article help us understand? What does it clarify for you? Focus on substantive issues (e.g., do not tell me that it easy to read and/or short). Be sure to explain your opinions and use examples from the text to support your claims.
- . (3) Critique. Are there things the author does not fully explain? Are big claims

unsupported by evidence? Do you disagree with specific claims based upon a different reading of the evidence? Focus on substantive issues (e.g., do not tell me that it is hard to read and/or long). Be sure to explain your opinions and use examples from the text to support your claims

Course Evaluation

The following list of assignments/activities will be assessed to determine your course grade.

Assignment/Activity	Percentage
Exams (3 with each worth 10%)	30%
Teaching/Implementing Lessons	20%
Quizzes/Reading Responses	10%
Article Critiques	10%
Mathematics Notebook	10%
Final Exam	20%

Grades are final once given by the instructor. There are no opportunities for re-doing assignments once they have been completed and turned into the instructor. Extra credit will not be offered. Based on a 100-point scale, final grades will be assigned on the following basis:

Numerical Average	Letter Grade
90 – 100	A
80 – 89	B
70 – 79	C
60 – 69	D
0 – 59	F

COURSE POLICES, PROCEDURES, AND EXPECTATIONS

Attendance, Participation, and Professionalism: You must demonstrate the dedication, preparation, and professionalism shown by effective teachers. Class attendance, promptness to class, meeting assignment deadlines, preparation for class, group and class participation, and effective use of class time are examples of teacher professionalism. **Attendance is not an option; it is a requirement!** Notification of absence is required.

- ✓ Only approved absences are considered excused. To be considered an excused absence, students will need to provide documentation to the instructor by the end of the second working day following the absence.

- ✓ If a student misses more than one fifth of the class time, it will be counted as an absence.
- ✓ Submit all assignments on due dates. Late assignments will not be accepted or graded.
- ✓ All assignments are required for successful completion of this course.
- ✓ All requirements including reading should be completed before class
- ✓ All papers must be typed and double-spaced using 12-point font. Place your name, date, course, and number at the top of the first page.
- ✓ Cell phone use is not permitted during class instructional time.

Cell Phones: Be Courteous/Considerate. **All cell phones must be set to silent during class hours** (e.g., No phone calls or text messaging should be conducted during class). If you need to make or receive an urgent phone call or text message during class, then please place your phone on vibrate and quietly step outside of the classroom to complete your call and/or text.

AMERICANS WITH DISABILITIES ACT STATEMENT

Lane College complies with the Americans with Disabilities Act. Students requesting academic accommodations should contact Ms. Kimberly Morris, Director of Counseling and Disability Support Services. In order to provide accommodations in a timely manner, students are encouraged to contact Ms. Morris as early in the term as possible.

Contact Information: Ms. Kimberly Morris,
Saunders Hall, Room 109
E-mail: kmorris@lanecollege.edu
Telephone: 731-426-7619

Mathematics Notebook Assignment

Mathematics Notebook

Candidates will prepare a notebook reflecting the standards 2012 of NCTM. The Mathematics Notebook will consist of four sections aligned to the 2012 NCTM Standards. Each section includes evidence of candidate mastery over the standards. The Candidate defends the notebook during a seminar presentation before a juried faculty panel.

The 2012 NCTM Standards are as follows:

NCTM Standards 2012

Standard 1: Content Knowledge

Effective teachers of secondary mathematics demonstrate and apply knowledge of major mathematics concepts, algorithms, procedures, connections, and applications within and among mathematical content domains.

Preservice teacher candidates:

1a) Demonstrate and apply knowledge of major mathematics concepts, algorithms, procedures, applications in varied contexts, and connections within and among mathematical domains (Number, Algebra, Geometry, Trigonometry, Statistics, Probability, Calculus, and Discrete Mathematics) as outlined in the *NCTM NCATE Mathematics Content for Secondary*

Standard 2: Mathematical Practices

Effective teachers of secondary mathematics solve problems, represent mathematical ideas, reason, prove, use mathematical models, attend to precision, identify elements of structure, generalize, engage in mathematical communication, and make connections as essential mathematical practices. They understand that these practices intersect with mathematical content and that understanding relies on the ability to demonstrate these practices within and among mathematical domains and in their teaching.

Preservice teacher candidates:

2a) Use problem solving to develop conceptual understanding, make sense of a wide variety of problems and persevere in solving them, apply and adapt a variety of strategies in solving problems confronted within the field of mathematics and other contexts, and formulate and test conjectures in order to frame generalizations.

2b) Reason abstractly, reflectively, and quantitatively with attention to units, constructing viable arguments and proofs, and critiquing the reasoning of others; represent and model generalizations using mathematics; recognize structure and express regularity in patterns of mathematical reasoning; use multiple representations to model and describe mathematics;

and utilize appropriate mathematical vocabulary and symbols to communicate mathematical ideas to others.

2c) Formulate, represent, analyze, and interpret mathematical models derived from real-world contexts or mathematical problems.

2d) Organize mathematical thinking and use the language of mathematics to express ideas precisely, both orally and in writing to multiple audiences.

2e) Demonstrate the interconnectedness of mathematical ideas and how they build on one another and recognize and apply mathematical connections among mathematical ideas and across various content areas and real-world contexts.

2f) Model how the development of mathematical understanding within and among mathematical domains intersects with the mathematical practices of problem solving, reasoning, communicating, connecting, and representing.

Standard 3: Content Pedagogy

Effective teachers of secondary mathematics apply knowledge of curriculum standards for mathematics and their relationship to student learning within and across mathematical domains. They incorporate research-based mathematical experiences and include multiple instructional strategies and mathematics-specific technological tools in their teaching to develop all students' mathematical understanding and proficiency. They provide students with opportunities to do mathematics – talking about it and connecting it to both theoretical and real-world contexts. They plan, select, implement, interpret, and use formative and summative assessments for monitoring student learning, measuring student mathematical understanding, and informing practice.

Preservice teacher candidates:

3a) Apply knowledge of curriculum standards for secondary mathematics and their relationship to student learning within and across mathematical domains.

3b) Analyze and consider research in planning for and leading students in rich mathematical learning experiences.

3c) Plan lessons and units that incorporate a variety of strategies, differentiated instruction for diverse populations, and mathematics-specific and instructional technologies in building all students' conceptual understanding and procedural proficiency.

3d) Provide students with opportunities to communicate about mathematics and make connections among mathematics, other content areas, everyday life, and the workplace.

3e) Implement techniques related to student engagement and communication including selecting high quality tasks, guiding mathematical discussions, identifying key mathematical ideas, identifying and addressing student misconceptions, and employing a range of questioning strategies.

3f) Plan, select, implement, interpret, and use formative and summative assessments to inform instruction by reflecting on mathematical proficiencies essential for all students.

3g) Monitor students' progress, make instructional decisions, and measure students' mathematical understanding and ability using formative and summative assessments.

Standard 4: Mathematical Learning Environment

Effective teachers of secondary mathematics exhibit knowledge of adolescent learning, development, and behavior. They use this knowledge to plan and create sequential learning opportunities grounded in mathematics education research where students are actively engaged in the mathematics they are learning and building from prior knowledge and skills. They demonstrate a positive disposition toward mathematical practices and learning, include culturally relevant perspectives in teaching, and demonstrate equitable and ethical treatment of and high expectations for all students. They use instructional tools such as manipulatives, digital tools, and virtual resources to enhance learning while recognizing the possible limitations of such tools.

Preservice teacher candidates:

- 4a)** Exhibit knowledge of adolescent learning, development, and behavior and demonstrate a positive disposition toward mathematical processes and learning.
- 4b)** Plan and create developmentally appropriate, sequential, and challenging learning opportunities grounded in mathematics education research in which students are actively engaged in building new knowledge from prior knowledge and experiences.
- 4c)** Incorporate knowledge of individual differences and the cultural and language diversity that exists within classrooms and include culturally relevant perspectives as a means to motivate and engage students.
- 4d)** Demonstrate equitable and ethical treatment of and high expectations for all students.
- 4e)** Apply mathematical content and pedagogical knowledge to select and use instructional tools such as manipulatives and physical models, drawings, virtual environments, spreadsheets, presentation tools, and mathematics-specific technologies (e.g., graphing tools, interactive geometry software, computer algebra systems, and statistical packages); and make sound decisions about when such tools enhance teaching and learning, recognizing both the insights to be gained and possible limitations of such tools.

Standard 5: Impact on Student Learning

Effective teachers of secondary mathematics provide evidence demonstrating that as a result of their instruction, secondary students' conceptual understanding, procedural fluency, strategic competence, adaptive reasoning, and application of major mathematics concepts in varied contexts have increased. These teachers support the continual development of a productive disposition toward mathematics. They show that new student mathematical knowledge has been created as a consequence of their ability to engage students in mathematical experiences that are developmentally appropriate, require active engagement, and include mathematics-specific technology in building new knowledge.

Preservice teacher candidates:

- 5a)** Verify that secondary students demonstrate conceptual understanding; procedural fluency; the ability to formulate, represent, and solve problems; logical reasoning and continuous reflection on that reasoning; productive disposition toward mathematics; and the application of mathematics in a variety of contexts within major mathematical domains.
- 5b)** Engage students in developmentally appropriate mathematical activities and investigations that require active

engagement and include mathematics-specific technology in building new knowledge.

5c) Collect, organize, analyze, and reflect on diagnostic, formative, and summative assessment evidence and determine the extent to which students' mathematical proficiencies have increased as a result of their instruction.

Standard 6: Professional Knowledge and Skills

Effective teachers of secondary mathematics are lifelong learners and recognize that learning is often collaborative. They participate in professional development experiences specific to mathematics and mathematics education, draw upon mathematics education research to inform practice, continuously reflect on their practice, and utilize resources from professional mathematics organizations.

Preservice teacher candidates:

6a) Take an active role in their professional growth by participating in professional development experiences that directly relate to the learning and teaching of mathematics.

6b) Engage in continuous and collaborative learning that draws upon research in mathematics education to inform practice; enhance learning opportunities for all students' mathematical knowledge development; involve colleagues, other school professionals, families, and various stakeholders; and advance their development as a reflective practitioner.

6c) Utilize resources from professional mathematics education organizations such as print, digital, and virtual resources/collections.

Mathematical Practices Section of Notebook.

2A: Problem solving

5 strategies/activities

2B: Reasoning and proof

5 strategies/activities

2C: Real world problems/authentic contexts

5 activities

2D: Vocabulary bank (From TA courses or Praxis 2 review)

2E: Math in other contexts and making connections

2 STEM lessons

2F: Connect domains

2 lessons that tied two or more domains of the mathematical practices of problem solving, reasoning, communicating, connecting, and representing

Content Pedagogy section of Mathematics Notebook

3a: Include your unit plan

3b: include your demographics and two article reviews on teaching mathematics. One article should be on accommodating diverse learners.

3c: Two lesson plans demonstrating accommodations plus reflections on if the accommodations helped and/or differentiating instruction for multiple levels of understanding.

3d: Two lesson plans demonstrating mathematics connected to life

3e: Two lessons showing the use of EQ, DOK, HOT and questioning techniques.

3f: Show the pre and posttest of the unit. Show the analysis of an assessment related to a lesson taught.

3G: Include the reflections of all lessons taught and what changes you would make to increase student engagement and learning.

Mathematical Learning Environment

4a: Include your class rules, organizational plan, parent communication plan, substitute folder list, and first day of school power point.

4b: Include two lessons demonstrating research used and how to test for and build on prior knowledge

4c: Include five researched strategies to increase student engagement/motivation

4d: Include the FEE from all taught lessons

4e: Include two lessons that utilize a variety of resources and technology and annotated list of five resources or technology that aid learning at levels of understanding such as struggling or gifted students.

Professional Section of Math notebook:

6a: Include the review of two scholarly journal articles.

Include membership in one professional organization (TEA, SCASCD, Beta Delta, NCTM)

Include Professional development activity sheet from methods

Include the professional development plan

Include at least one professional conference attended

AOD self-assessment

Resume, cover letter, business card, photo

Self-assessment of Teaching Performance.

Philosophy of Mathematics Education

6b. List collaborative efforts or professional seminars attended

6c: Two research article reviews.

Mathematics Notebook Grading Rubric:

Evidence submitted	Distinguished 4	Accomplished 3	Developing 2	Beginning 1
Mathematical Practices Section of Notebook.				
2A: Problem solving 5 strategies/ Activities annotated NCTM 1.4 (03)	Five appropriate activities, subject and level, what the activity demonstrates	Four appropriate activities, Subject and level	Three appropriate activated, subject and level	Two appropriate activities, subject and level.
2B: Reasoning and proof 5 strategies/ Activities annotated	5 appropriate activities, giving the subject and level, and explanation of how to use it, goals of the activities	4 appropriate activities, giving the subject and level, and explanation of how to use it,	3 appropriate activities, giving the subject and level	2 appropriate activities, giving the subject and level,
2C: Real world problems/authentic contexts 5 activities annotated NCTM 7.2 (03)	5 activities that hook students, subject and level, relevant to their lives, meaningful mathematics, challenging	4 activities that hook students, subject and level, relevant to their lives, meaningful mathematics,	3 activities that hook students, subject and level, relevant to their lives,	2 activities that hook students, subject and level,
2D: Vocabulary bank	Glossary of mathematical terms used across 5 subject areas. Ability to define, use, and explain terms.	Glossary of mathematical terms used across 4 subject areas. Ability to define, use, and explain terms.	Glossary of mathematical terms used across 3 subject areas. Ability to define,	Glossary of mathematical terms used across 2 subject areas.
2E: Math in other contexts and making connections 2 STEM lessons NCTM 8.9 (03)	2 STEM lessons that are planned in detail, engaging, complex, connect to other disciplines, and include rigor.	2 STEM lessons that are planned in detail, engaging, complex, connect to other disciplines,	2 STEM lessons that are planned in detail, engaging, complex,	1 STEM lessons that are planned in detail, engaging,
2F: Connect domains 2 lessons that tied two or more domains of the mathematical practices	2 lessons that include mathematical practices, demonstrate connections, go beyond the textbook, and engage students.	2 lessons that include mathematical practices, demonstrate connections, go beyond the textbook,	2 lessons that include mathematical practices, demonstrate connections,	2 lessons that include mathematical practices,

Content Pedagogy section of Mathematics Notebook				
3a: Include your unit plan	Unit plan is complete with all sections included, is of good quality, includes all the elements required in each section, and has sufficient detail.	Unit plan is complete with all sections included, is of good quality, includes all the elements required in each section,	Unit plan is complete with all sections included, is of good quality,	Unit plan is complete with all sections included.
3b: include your demographics and two article reviews on teaching mathematics. NCTM 8.6 (03)	Include the demographics of the class and two article reviews. Explain how this type of research improves lessons and learning for students.	Include the demographics of the class and one article reviews. Explain how this type of research improves lessons and learning for students.	Include the demographics of the class and one article review.	Include the demographics of the class or one article review.
3c: Two lesson plans demonstrating accommodations plus reflections	Two lesson plans highlighting accommodations. Include reflections after using the accommodations on the impact on student learning.	Two lesson plans highlighting accommodations. Include reflections after using the accommodations	Two lesson plans highlighting accommodations.	One lesson plans highlighting accommodations.
3d: Two lesson plans demonstrating mathematics connected to life	Two lesson plans that are applicable to real life. Lessons are interesting and require application. Students carry out some project or investigation.	Two lesson plans that are applicable to real life. Lessons are interesting and require application.	Two lesson plans that are applicable to real life. Lessons are interesting	One lesson plan that is applicable to real life.
3e: Two lessons showing the use of EQ, DOK, HOT and questioning techniques. NCTM 7.2 (03)	Two lesson plans highlighting the use of questioning that are higher level and more complex. Use of collaborative learning and student discourse. Students demonstrate depth of	Two lesson plans highlighting the use of questioning that are higher level and more complex. Use of collaborative learning and student discourse.	Two lesson plans highlighting the use of questioning that are higher level and more complex.	Two lesson plans highlighting the use of questioning that are higher level

	learning.			
3f: Show the pre and posttest of the unit. Show the analysis of an assessment related to a lesson taught. NCTM 7.5 (03)	Pre and Post test match objectives, assess important mathematics, are aligned to each other, and address the EQ/EP	Pre and Post test match objectives, assess important mathematics, are aligned to each other,	Pre and Post test match objectives, assess important mathematics,	Pre and Post test match objectives,
3G: Include the reflections of all lessons taught NCTM 7.5 (03)	Reflections show depth of understanding student learning, impact and gains, and how to re-address problem areas for students	Reflections show depth of understanding student learning, impact and gains,	Reflections show depth of understanding student learning,	Reflections do not show depth of understanding student learning,
Mathematical Learning Environment				
4a: Include your class rules, organizational plan, parent communication plan, substitute folder list, and first day of school power point	Items included show how you will set the environment for learning. All four are complete, detailed, of good quality.	Items included show how you will set the environment for learning. All four are complete, detailed,	Items included show how you will set the environment for learning. Three are complete,	Items included show how you will set the environment for learning. Two are complete
4b: Include two lessons demonstrating research used and how to test for and build on prior knowledge NCTM 8.6 (03)	Two lessons show how you research your class and plan according to their needs, use best practices, include formative assessments, and assess for prior knowledge.	Two lessons show how you research your class and plan according to their needs, use best practices, include formative assessments,	Two lessons show how you research your class and plan according to their needs, use best practices,	Two lessons show how you research your class and plan according to their needs,
4c: Include five researched strategies to increase student engagement/motivation NCTM 8.6 (03)	Five strategies to motivate students to learn. The strategies demonstrate best practices. Use one strategy in a lesson and include a reflection on the impact.	Five strategies to motivate students to learn. The strategies demonstrate best practices. Use one strategy in a lesson	Four strategies to motivate students to learn. The strategies demonstrate best practices.	Four strategies to motivate students to learn.

4d: Include the FEE from all taught lessons	Include all FEEs from lessons taught. FEEs show that you impact student learning. Reflect on your growth over time. Identify one area for growth.	Include all FEEs from lessons taught. FEEs show that you impact student learning. Reflect on your growth over time.	Include all FEEs from lessons taught. FEEs show that you impact student learning.	Include all FEEs from lessons taught. FEEs show that you are weak in some areas.
4e: Include two lessons that utilize a variety of resources and technology and annotated list of five resources or technology NCTM 6.1 (03)	Two lessons that use multiple technologies and resources. Make a list of five important resources or technology. Reflect on how technology enriches math and invites learning.	Two lessons that use multiple technologies and resources. Make a list of five important resources or technology.	Two lessons that use technology and resources. Make a list of five important resources or technology.	Two lessons that use technology or resources
Professional Section of Math notebook:				
6a: Include the review of two scholarly journal articles. Include membership in one professional organization (TEA, SCASCD, Beta Delta, NCTM) Include Professional development activity sheet from methods Include the professional development plan Include at least one professional conference attended AOD self-assessment	Demonstrate your personal growth through the reading of research, professional memberships, a plan for development, attending conferences, and materials needed for an interview. Include your personal philosophy of education that is of high quality.	Demonstrate your personal growth through the reading of research, professional memberships, a plan for development, attending conferences, and materials needed for an interview. Include your personal philosophy of education	Demonstrate your personal growth through at least three of the following: the reading of research, professional memberships, a plan for development, attending conferences, and materials needed for an interview. Include your personal philosophy of	Demonstrate your personal growth through at least two of the following: the reading of research, professional memberships, a plan for development, attending conferences, and materials needed for an interview. Include your personal philosophy of

Resume, cover letter, business card, photo Self-assessment of Teaching Performance. Philosophy of Mathematics Education			education	education
6b. List collaborative efforts or professional seminars attended And reflections	Make a list of opportunities where you have collaborated with professionals, attended professional seminars, and reflected on your experience.	Make a list of opportunities where you have collaborated with professionals, attended professional seminars,	Make a list of opportunities where you have collaborated with professionals or attended professional seminars	Listed only one collaboration or seminar.
6c: Two research article reviews. NCTM 8.6 (03)	Two research article reviews that demonstrate your ability to understand research, and an insightful reflection including how you would put it into practice or link it to a lessons where you applied the research.	Two research article reviews that demonstrate your ability to understand research,	One research article review that demonstrate your ability to understand research	One research article review