

**George Mason University**  
**College of Education and Human Development**  
**Secondary Education Program**

EDCI 672.002 – Advanced Methods of Teaching Mathematics in the Secondary School  
3 Credits, Spring 2017  
Wednesdays 7:20 – 10:00pm, Planetary Hall 212 – Fairfax Campus

**Faculty**

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**Prerequisites/Corequisites**

EDCI 372/572

**University Catalog Course Description**

This course emphasizes developing different styles of teaching and covers curricula, current issues, and research literature in secondary school mathematics. School-based field experience required.

**Course Overview**

In *Teaching Mathematics in the Secondary School* course you thought about what it means to *understand* mathematics, were introduced to learning theories, became familiar with standards documents, and learned about characteristics of mathematics instruction that fosters deep understanding of and proficiency in working with mathematics.

In this course, *Advanced Methods of Teaching Mathematics in the Secondary School*, you will learn more about four aspects of mathematics teaching: managing classroom discourse, differentiation, use of technology, equity and assessment. You will explore these aspects of mathematics teaching while keeping a focus on student thinking and learning. Regardless of whether a teacher is engaging with the class, differentiating instruction, or conducting an assessment, the teacher must focus on the development of student thinking about mathematics and a respect for student difference and diversity. You will learn how to do this in this class. This will help you as you embark upon Internship and your first teaching position!

We will address the objectives as we progress through the course, which is organized into four sections:

**I. Managing Classroom Discourse**

In this part of the course you will critique and learn more about teacher decisions in managing whole-class mathematical discussions. You will learn more about questioning and will consider appropriate times to ask particular questions. Then, later in the course, you will have the opportunity to practice managing a conversation when you teach a full lesson to the class.

**II. Assessment**

In this final section of the course you will consider the role of assessment in a mathematics classroom and will learn more about ways that teachers might gain insight into student thinking about mathematics.

**III. Differentiation**

In this final section of the course, you will become familiar with strategies for differentiating mathematics instruction. By focusing on student thinking, you will learn how to meet student needs while holding them to high standards.

**IV. The Responsibility of the Teacher in Today's Schools**

In this final section of the course you will consider the role of a *mathematics* teacher in today's world. You will consider your responsibility to the diverse group of students you will be teaching and to the surrounding community.

## Course Delivery Method

This course will be delivered using a lecture format.

## Learner Outcomes or Objectives

This course is designed to enable students to do the following:

1. Demonstrate an ability to critique classroom discourse and the role of the teacher in facilitating that discourse through findings from research on student learning.
2. Demonstrate an ability to plan a mathematics lesson that fosters deep understanding of mathematics content for *all* students.
3. Plan a mathematics lesson that includes elements of differentiation, assessment, and technology, is problem-based, requires students to engage in sense making, and engages students in mathematical communication while adhering to state and national standards.
4. Develop assessments that give a teacher insight into student thinking about mathematics content.
5. Conduct an analysis of ideas for teaching mathematics in diverse classrooms.
6. Develop knowledge, skills, and professional behaviors across secondary settings, examine the nature of mathematics, how mathematics should be taught, and how

students learn mathematics; and observe and analyze a range of approaches to mathematics teaching and learning focusing on tasks, discourse, environment, and assessment.

### **Professional Standards (National Council of Teachers of Mathematics)**

Upon completion of this course, students will have met the following professional standards:

**NCTM Secondary Mathematics Standard 1, Content Knowledge:** Preservice teacher candidates: 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 CAEP Mathematics Content for Secondary.

**NCTM Secondary Mathematics 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.

**NCTM Secondary Mathematics 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.

**NCTM Secondary Mathematics 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.

**NCTM Secondary Mathematics Standard 7, Secondary Mathematics Field Experiences and Clinical Practices:** Effective teachers of secondary mathematics engage in a planned sequence of field experiences and clinical practice under the supervision of experienced and highly qualified mathematics teachers. They develop a broad experiential base of knowledge, skills, effective approaches to mathematics teaching and learning, and professional behaviors across both middle and high school settings that involve a diverse range and varied groupings of students. Candidates experience a full-time student teaching/internship in secondary mathematics directed by university or college faculty with secondary mathematics teaching experience or equivalent knowledge base.

### Required Texts

Brahier, D.J. (2012). *Teaching secondary and middle school mathematics* (4<sup>th</sup> edition). Boston: Pearson Education Inc.

Brahier, D. J. (2001). *Assessment in middle and high school mathematics: A teacher's guide*. New York: Eye on Education.

You will also complete additional readings as assigned. All additional readings will be uploaded to Blackboard.

### Course Performance Evaluation

Students are expected to submit all assignments on time in the manner outlined by the instructor (e.g., Blackboard, Tk20, hard copy).

- **Assignments and/or Examinations**

Assessment	Percentage of Grade
Participation and Preparation (including weekly and smaller assignments)	15%
Peer Teaching	10%
Instruction and Assessment Plan	25%
Micro-Teaching	10%
Field Work & Video Reflection Task	15%
Unit Plan	20%

(differentiated by undergrad/graduate level)

### *Unit Plan and Presentation – 20%*

Throughout this semester, you will explore many issues related to the teaching and learning of mathematics. In this culminating assignment, you will have the opportunity to use the knowledge, skills, and understandings you've gained in this and the previous semester in the creation of a complete unit of study. Within this unit plan, you will be asked to design lessons that pay attention to the use of technology, the development of student understanding of mathematics content, various standards documents, assessment of student understanding, and ways to differentiate instruction for diverse groups of learners. After submission of the unit plan, you will present your plan to your peers so that the entire class can begin to create a collection of teaching ideas for various content areas within secondary mathematics. **The requirement for this assignment differs for graduate and undergraduate students. You must pass this assignment to continue in the program.**

### *Instruction and Assessment Plan – 25%*

#### *Individualized Lesson Plan – 10%*

You will develop an individualized plan for a child with developmental, learning, physical, or linguistic differences within the context of the general environment and curriculum. This will count as one of the lessons in your unit plan.

#### *Assessment Assignment – 15%*

In this assessment, you will apply what you learned about assessment to your unit plan. Building on what you learned, you will further develop your assessment plan for the unit and, in so doing, develop two assessment instruments and corresponding grading rubrics. One assessment will be a quiz assessing the goals and objectives from one of the lessons in your unit plan. Another assessment will be an alternative form of assessment used to assess the goals and objectives of the unit.

#### *Peer Teaching Activity- 10%*

You will record your facilitation of a short task or portion of a task and upload the video clips to Edthena. Then you will code the videos using codes discussed in class and write reflections/self-assessments based on the video clips. Edthena is an online tool that uses video coding as a means for feedback and reflection. All candidates taking Methods II are required to use Edthena starting in the fall 2015.

#### *Micro-Teaching Assignment- 10%*

In this assignment, you will apply all that you learned about planning and orchestrating classroom discourse to the development, implementation, and reflection upon a lesson surrounding a mathematics concept covered in secondary mathematics classrooms.

The instructor will assign the lesson topic. The implementation of the lesson will be video-recorded so as to facilitate the reflection process. This process is valuable to you as you teach and reflect on your teaching of a lesson.

### *Field Work & Video Reflection Task – 15%*

You will complete 15 hours of field work and keep a log of these hours for submission at the end of the semester. During this time, you will remain with one teacher and slowly begin to interact with students. By the end of the experience you will have taught a whole, or part of a whole, lesson. You will submit the lesson and reflect upon its effectiveness. This assignment provides you with an excellent opportunity to work with real students as you prepare to become a teacher. You will upload a video recording of the lesson to Edthena. All candidates taking Methods II are required to use Edthena starting in the fall 2015.

### **Communication**

You must regularly check your GMU email and Blackboard: <https://courses.gmu.edu>.

### **Evaluation**

Final course grades will be assigned based upon weighted percentages as indicated by the Course Expectations.

A	93-100%
A-	90-92%
B+	88-89%
B	80-87%
C	70-79%
F	Below 70%

### **TK20 PERFORMANCE-BASED ASSESSMENT SUBMISSION REQUIREMENT**

Every student registered for any Secondary Education course with a required performance-based assessment is required to submit this assessment, Lesson Plan to Tk20 through Blackboard (regardless of whether the student is taking the course as an elective, a onetime course or as part of an undergraduate minor). Evaluation of the performance-based assessment by the course instructor will also be completed in Tk20 through Blackboard. Failure to submit the assessment to Tk20 (through Blackboard) will result in the course instructor reporting the course grade as Incomplete (IN). Unless the IN grade is changed upon completion of the required Tk20 submission, the IN will convert to an F nine weeks into the following semester.

- **Other Requirements**

The participation of each class member is vitally important. If you do not come prepared to discuss the readings, to share your work on a given assignment, and to participate in the activities of the day the entire class will suffer. You **must** commit to being coming to every class on time, being prepared for the evening's activities, and being ready to participate. You can expect that, in addition to work on the larger projects outlined below, there will be weekly readings and assignments that will fall into this category. If, however, there is an emergency and you cannot make it to class, you **must email me ahead of time** and submit all assignments electronically before the end of class.

- **Grading**

Due Dates: All assignments are due by 7:20pm of the date assigned.

Late Assignments: If an assignment is not uploaded by 7:20pm of the date assigned, and you have not contacted me to receive an extension, then the assignment will be considered late. All late assignments will receive a *one-letter grade penalty*. If you know that you are going to have an issue with completing an assignment on time, please **notify me ahead of time** to avoid this late grade penalty.

Revised Assignments: When students earn less than 80% on an assignment, I often offer them the opportunity to revise and resubmit. As long as students meet the guidelines for resubmission, students may earn up to 75% of the missed points on the assignment. Please keep in mind that it requires additional work to grade revised assignments, so they will require additional time to re-grade.

### Professional Dispositions

Students are expected to exhibit professional behaviors and dispositions at all times. In addition to being punctual, students are expected to actively participate and engage in assignments and class discussions. In order to maintain a focused class, laptops and cell phones are to be used exclusively for the current class topic. Examples of this include searching for math standards, videos of mathematical algorithms, taking pictures of manipulatives, etc. Emailing, texting, and other forms of communication and social media are not permitted during class time unless it is directly related to the activity. In addition, students should refrain from grading papers and preparing lesson materials for their school placements during class time.

### Class Schedule

The dates are subject to change dependent on the progress of the course. Additional smaller assignments and readings may be made each week. Sometimes students will read different articles or chapters and share their understandings with the class.

Date	Topic	Readings	Assignments due before class
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<b>Jan 25</b>	<b>The Big Picture:</b> Course Goals	NCTM (2013) Bartell & Meyer (2008)	
<b>Jan 30</b>	***Mandatory Program Orientation***		
<b>Feb 1</b>	<b>Facilitating Mathematical Discourse</b>  <b>Staging a Unit</b>	Boaler & Broadie (2005)  Brahier: pp. 136-141	Select Unit Plan topic
<b>Feb 8</b>	<b>Facilitating Mathematical Discourse</b>	Hoffman et al. (2009)	
<b>Feb 15</b>	<b>Facilitating Mathematical Discourse</b> - Proof & Argumentation - Geometric Habits of Mind	NCTM (2012)	Submit Unit Topic Concept Map
<b>Feb 22</b>	<b>Meaningful Assessment and Effective Questioning</b>  - Role of Assessment - NCTM Assessment Standards  Question Types  - Open Questions  - Open-Middled  - Closed Questions	Brahier (2001, assessment book) Chapter 1  Dekker (2007)	Select appropriate NCTM, VA SOL, and CCSM standard that align to Unit and Assessment Plans and Submit Backwards Design table for Unit Plan



<b>Mar 1</b>	<b>Geometric Thinking</b> - Van Hiele levels  <b>Assessment</b> - Creating Rubrics for Alternate Assessments - Scoring Alternate Assessments	Select one of the following (selected during class):  Brahier pp. 289- 310  Goetz (2005)  Stutzman & Race (2004)	Individualized Lesson Plan due  Select Micro-teaching topic (in class)
<b>Mar 8</b>	<b>Geometric Tools &amp; Geometric Thinking</b>  <b>Assessment:</b> - Alternative Assessments - The Role of Homework	Brahier (2001): Chapters 2 and 3	Geometric Tool Presentation  Drafts of open, open-middled, and closed questions for Unit Plan due
<b>Mar 15*</b>	Spring Break – No Class		
<b>Mar 22</b>	<b>Assessment:</b> - The Role of Homework - Determining Final Grades - Assessment Plans - Standardized Assessment	Brahier (2001): Chapters 4 and 5	Upload video recorded lesson to Edthena.  Bring Alternative Assessment Draft to class  Draft of your parallel task based on your Unit Plan due
<b>Mar 29</b>	<b>Differentiation, Equity, and Mathematics</b> - Differentiation - NCTM’s Equity Principle - Equity concerns in Math Education	Brahier (2012) Chapter 12	Peer Teaching due

<b>April 5</b>	<b>Honoring Diversity and Equity in Teaching Mathematics (cont.)</b> - Complex Instruction	Cohen et al. (1999) – Grad Only  Nasir et al. (2013)	Video Reflection Task due
<b>Apr 12</b>	Asynchronous work session	Meet with your Micro-Teaching team to create a lesson plan. Our classroom will be available, or you may choose to meet off campus or virtually.	
<b>April 19</b>	<b>Differentiation and Honoring Diversity and Equity in Teaching Mathematics: Exceptional Learners</b> - Special Education Gifted Education	Selected readings – see course site (different readings for Grad and UG)	Assessment Plan due
<b>Apr 26</b>	<b>Differentiation and Discourse (cont.)</b> - ELL students and Mathematics Instruction	Selected readings – see course site (different readings for Grad and UG) <b>Microteaching Presentations 1 &amp; 2</b>	Micro-Teaching lesson plan due
<b>May 3</b>	<b>Micro-teaching Presentations</b>	<b>Microteaching Presentations 3, 4, &amp; 5</b>	Unit Plan Draft due
<b>May 10</b>	<b>The Mathematics Teacher and the Community</b>	Brahier Chapter 13 <b>Microteaching Presentation 6 &amp; 7</b>	Unit Plan due
<b>May 17</b>	<b>Complete and submit final assignments</b>		Submit Field Experience Reflections  Micro-Teaching reflections (in class)

Note: Faculty reserves the right to alter the schedule as necessary, with notification to students.

### Core Values Commitment

The College of Education and Human Development is committed to collaboration, ethical leadership, innovation, research-based practice, and social justice. Students are expected to adhere to these principles: <http://cehd.gmu.edu/values/>.

## **GMU Policies and Resources for Students**

### *Policies*

- Students must adhere to the guidelines of the Mason Honor Code (see <http://oai.gmu.edu/the-mason-honor-code/>).
- Students must follow the university policy for Responsible Use of Computing (see <http://universitypolicy.gmu.edu/policies/responsible-use-of-computing/>).
- Students are responsible for the content of university communications sent to their Mason email account and are required to activate their account and check it regularly. All communication from the university, college, school, and program will be sent to students **solely** through their Mason email account.
- Students with disabilities who seek accommodations in a course must be registered with George Mason University Disability Services. Approved accommodations will begin at the time the written letter from Disability Services is received by the instructor (see <http://ods.gmu.edu/>).
- Students must follow the university policy stating that all sound emitting devices shall be silenced during class unless otherwise authorized by the instructor.

### *Campus Resources*

- Support for submission of assignments to Tk20 should be directed to [tk20help@gmu.edu](mailto:tk20help@gmu.edu) or <https://cehd.gmu.edu/aero/tk20>. Questions or concerns regarding use of Blackboard should be directed to <http://coursessupport.gmu.edu/>.
- The Writing Center provides a variety of resources and services (e.g., tutoring, workshops, writing guides, handbooks) intended to support students as they work to construct and share knowledge through writing (see <http://writingcenter.gmu.edu/>).
- The Counseling and Psychological Services (CAPS) staff consists of professional counseling and clinical psychologists, social workers, and counselors who offer a wide range of services (e.g., individual and group counseling, workshops and outreach

programs) to enhance students' personal experience and academic performance (see <http://caps.gmu.edu/>).

- The Student Support & Advocacy Center staff helps students develop and maintain healthy lifestyles through confidential one-on-one support as well as through interactive programs and resources. Some of the topics they address are healthy relationships, stress management, nutrition, sexual assault, drug and alcohol use, and sexual health (see <http://ssac.gmu.edu/>). Students in need of these services may contact the office by phone at 703-993-3686. Concerned students, faculty and staff may also make a referral to express concern for the safety or well-being of a Mason student or the community by going to <http://ssac.gmu.edu/make-a-referral/>.

**For additional information on the College of Education and Human Development, please visit our website <https://cehd.gmu.edu/>.**

## VIDEO REFLECTION TASK (VRT) RUBRIC

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This assessment is an opportunity to demonstrate the ability to critically reflect on your practice, while also completing an observation by your university supervisor. Record as many lessons as you want after your supervisor's first observation and choose the lesson you are most proud of and/or have the most to reflect upon and analyze. Upload 30 minutes of your lesson to Edthena. Be sure to include a copy of your lesson plan, your holistic reflection on the lesson, and an analysis of the critical incident during the lesson. (You should also indicate on the video the 5-10 minute clip you identify as the critical incident). When the assessment is complete, upload the lesson plan to BlackBoard/Tk-20 and notify the university supervisor.

### Requirements for Internship and Licensure

In order to earn a recommendation for licensure, a candidate must be recommended by both her/his university supervisor and mentor teacher, as well as earn passing scores on all internship assessments.

### Submission/Assessment Directions

The Teacher Candidate will:

1. Create a lesson plan that will be attached to the Edthena video.
2. Upload the lesson plan to BlackBoard./Tk20
3. Video record a 30-minute segment of a lesson and upload this to Edthena
  - a. *Note: This video will be completed in lieu of one of the university supervisor's observations.*
4. Write a holistic reflective statement that includes technical, practical and critical levels of reflection— attaching this reflection to the 30 minute Edthena video
5. Select a segment of the video that contains a 5-10 minute “critical incident” and upload this to Edthena
6. Write a “critical incident” analysis and attach this to the 5-10 minute Edthena video
  - a. Briefly describe what happened
  - b. Explain why you selected this clip
  - c. Describe what went well and what aspects of the lesson you would like to change
  - d. Propose alternate ways to handle the critical incident
  - e. Summarize what you learned and how it will impact your future teaching

The University Supervisor will:

1. Grade the assignment using the rubric. This rubric has been uploaded to BlackBoard/Tk-20 where the University Supervisor must complete the rubric and submit the grade for this assignment.

Name of candidate \_\_\_\_\_

Date \_\_\_\_\_

School: \_\_\_\_\_ Grade/Content: \_\_\_\_\_ / \_\_\_\_\_

Semester/Year \_\_\_\_\_

Criteria	Does Not Meet Expectation (1)	Approaches Expectation (2)	Meets Expectation (3)	Exceeds Expectation (4)
<b>LESSON PLAN AND TEACHING</b>				
The candidate creates developmentally appropriate instruction that takes into account individual learners' strengths, interests, and needs and that enable each learner to advance and accelerate his/her learning.  <i>InTASC 1(b)</i>	The candidate's instruction <b>does not</b> take into account individual learners' strengths, interests, and needs and <b>does not</b> enable learners to advance and accelerate his/her learning.	The candidate creates instruction that takes into account <b>some students'</b> strengths, interests, and needs and that <b>enables some learners</b> to advance and accelerate his/her learning.	The candidate creates <b>developmentally appropriate instruction</b> that takes into account individual learners' strengths, interests, and needs and that <b>enables each learner</b> to advance and accelerate his/her learning.	The candidate creates <b>student-centered instruction</b> that is <b>developmentally appropriate</b> and takes into account individual learners' strengths, interests, and needs and that <b>enables each learner</b> to advance and accelerate his/her learning.
The candidate designs, adapts, and delivers instruction to address each student's diverse learning strengths and needs and creates opportunities for students to demonstrate their learning in different ways.  <i>InTASC 2(a)</i>	The candidate <b>does not</b> design, adapt, or deliver instruction to address each student's diverse learning strengths and needs and <b>did not</b> create opportunities for students to demonstrate their learning in different ways.	The candidate designs, adapts, and delivers instruction to address <b>some student's</b> diverse learning strengths and needs and creates <b>few opportunities</b> for some students to demonstrate their learning in different ways.	The candidate designs, adapts, and delivers instruction to address <b>each student's</b> diverse learning strengths and needs and creates opportunities for students to demonstrate their learning in different ways.	The candidate designs, adapts, and delivers <b>student-centered instruction</b> that addresses <b>each student's</b> diverse learning strengths and needs and creates <b>multiple opportunities</b> for students to demonstrate their learning in different ways.
The candidate manages the learning environment to actively and equitably engage learners by organizing, allocating, and coordinating the resources of time, space, and learner's attention.  <i>InTASC 3(d)</i>	The candidate <b>does not plan</b> ways to manage the learning environment to actively <b>and/or</b> equitably engage learners. The candidate <b>does not</b> show evidence of organizing, allocating, and coordinating the resources of time, space, and learner's attention.	The candidate plans ways to <b>marginally</b> manage the learning environment to actively <b>and</b> equitably engage <b>some</b> learners by organizing, allocating, and coordinating the resources of time, space, and learner's attention.	The candidate plans ways to <b>effectively</b> manage the learning environment to actively and equitably engage <b>the majority</b> of learners by organizing, allocating, and coordinating the resources of time, space, and learner's attention.	The candidate plans ways to <b>effectively</b> manage the learning environment to actively and equitably engage <b>all</b> learners by <b>creatively</b> organizing, allocating, and coordinating the resources of time, space, and learner's attention.
The candidate engages learners in applying methods of inquiry and standards of evidence used in the discipline.  <i>InTASC 4(c)</i>	The candidate <b>does not</b> engage learners in applying methods of inquiry and standards of evidence used in the discipline.	The candidate engages learners in applying methods of inquiry <b>but disregards the standards of evidence</b> used in the discipline.	The candidate <b>engages</b> learners in applying methods of inquiry and the <b>appropriate</b> standards of evidence used in the discipline.	The candidate engages learners in applying <b>multiple methods</b> of inquiry and <b>appropriate</b> standards of evidence used in the discipline by implementing <b>authentic tasks</b> .
The candidate stimulates learner reflection on prior content knowledge, links new concepts to familiar concepts, and makes connections to learners' experiences.  <i>InTASC 4(d)</i>	The candidate <b>does not</b> stimulate learner reflection on prior content knowledge, does not link new concepts to familiar concepts, and does not make connections to learners' experiences.	The candidate stimulates learner reflection on prior content knowledge, <b>but neither links new concepts</b> to familiar concepts <b>nor makes connections</b> to learners' experiences.	The candidate stimulates learner reflection on prior content knowledge, links new concepts to familiar concepts, and makes connections to learners' experiences.	The candidate <b>creatively</b> stimulates learner reflection on prior content knowledge, links new concepts to familiar concepts, and makes connections to learners' experiences <b>using student-centered instruction</b> .
The candidate uses appropriate strategies and resources to adapt instruction to the needs of individuals and groups of learners.  <i>InTASC 8(a)</i>	The candidate <b>does not</b> adapt instruction to the needs of individuals and groups of learners.	The candidate adapts instruction to the needs of <b>some individuals</b> and groups of learners but <b>seldom</b> incorporates appropriate strategies or resources.	The candidate uses appropriate strategies and resources to adapt instruction to the needs of individuals and groups of learners.	The candidate uses appropriate and <b>creative</b> strategies and resources within <b>authentic tasks</b> to adapt instruction to the needs of individuals and groups of learners.
The candidate continuously monitors student learning, engages learners in assessing their progress, and adjusts instruction in response to student learning needs.  <i>InTASC 8(b)</i>	The candidate <b>does not</b> provide evidence of monitoring student learning <b>and/or does not</b> engage learners in assessing their progress, <b>and/or does not</b> provide evidence of adjusting instruction in response to student learning needs.	The candidate provides <b>minimal</b> evidence of monitoring student learning and engaging learners in assessing their progress, but the candidate rarely adjusts instruction in response to student learning needs.	The candidate provides <b>consistent</b> evidence of monitoring student learning, engaging learners in assessing their progress, and adjusts instruction in response to student learning needs.	The candidate provides <b>substantial</b> evidence of continuously monitoring student learning, engaging learners in assessing their progress, and <b>innovatively</b> adjusts instruction in response to student learning needs.

Criteria	Does Not Meet Expectation (1)	Approaches Expectation (2)	Meets Expectation (3)	Exceeds Expectation (4)
The candidate varies his/her role in the instructional process (e.g. instructor, facilitator, coach, audience) in relation to the content and purpose of instruction and the needs of learners. <i>InTASC 8(d)</i>	The candidate <b>does not</b> vary his/her role in the instructional process (e.g. instructor, facilitator, coach, audience).	The candidate <b>sometimes</b> varies his/her role in the instructional process (e.g. instructor, facilitator, coach, audience) but it is in relation to <b>neither</b> the content <b>nor</b> the purpose of instruction nor the needs of learners.	The candidate <b>varies</b> his/her role in the instructional process (e.g. instructor, facilitator, coach, audience) in relation to the content and purpose of instruction and the needs of learners.	The candidate <b>consistently</b> varies his/her role in engaging instructional processes (e.g. instructor, facilitator, coach, audience) in relation to the content and purpose of instruction and the needs of learners.
The candidate engages all learners in developing higher order questioning skills and metacognitive processes. <i>InTASC 8(f)</i>	The candidate <b>does not</b> engage learners in developing higher order questioning skills <b>or</b> metacognitive processes.	The candidate engages <b>some learners</b> in developing higher order questioning skills <b>or</b> metacognitive processes.	The candidate engages <b>most</b> learners in developing higher order questioning skills <b>and</b> metacognitive processes.	The candidate engages <b>all</b> learners in developing higher order questioning skills <b>and</b> metacognitive processes within authentic learning situations.
The candidate asks questions to stimulate discussion that serves different purposes (e.g., probing for learner understanding, helping learners articulate their ideas and thinking processes, stimulating curiosity, and helping learners to question). <i>InTASC 8(i)</i>	The candidate <b>does not</b> ask questions to stimulate discussion.	The candidate <b>asks</b> questions to stimulate discussion but the purposes tend to be <b>low level</b> .	The candidate asks <b>appropriate</b> questions to stimulate discussion that serves different purposes (e.g., probing for learner understanding, helping learners articulate their ideas and thinking processes, stimulating curiosity, and helping learners to question).	The candidate asks <b>varied</b> questions to stimulate discussion that serves different purposes (e.g., probing for learner understanding, helping learners articulate their ideas and thinking processes, stimulating curiosity, and helping learners to question) <b>within authentic learning situations</b> .
<b>HOLISTIC REFLECTION</b>				
The candidate engages in meaningful and appropriate professional learning experiences aligned with his/her own needs and the needs of the learners, school, and system. <i>InTASC 9(b)</i>	The candidate <b>does not</b> take responsibility for promoting the learners' growth and development in a reflective statement. The statement does not specifically the critical levels of reflections.	The candidate takes responsibility for promoting the learners' growth and development in a reflective statement, <b>but does not address all</b> of the levels of critical reflections.	The candidate takes responsibility for promoting the learners' growth and development in a reflective statement that includes <b>all of the levels of critical reflection</b> .	The candidate takes responsibility for promoting the learners' growth and development in a <b>well-written and insightful</b> reflective statement that includes <b>all of the levels of critical reflection</b> .
The candidate uses a variety of data to evaluate the outcomes of teaching and learning and adapts planning and practice. <i>InTASC 9(c)</i>	The candidate <b>does not</b> use a variety of data to evaluate the outcomes of teaching and learning and to adapt planning and practice.	The candidate <b>uses a variety of data</b> to evaluate the outcomes of teaching and learning but does not provide strategies to adapt planning and/or practice.	The candidate <b>uses a variety of data</b> to evaluate the outcomes of teaching and learning and to adapt planning and practice.	The candidate <b>effectively uses a variety of data</b> to evaluate the outcomes of teaching and learning and to appropriately adapt planning and practice.
The candidate uses ongoing analysis and reflection to improve planning and practice. <i>InTASC 9(l)</i>	There was <b>no evidence</b> that the candidate used ongoing analysis and/or reflection to improve planning and practice.	The candidate <b>uses marginal analysis and reflection strategies</b> to improve planning and practice.	The candidate uses <b>ongoing analysis and reflection</b> to improve planning and practice.	The candidate <b>effectively uses ongoing analysis and deep reflection</b> to improve planning and practice.
<b>CRITICAL INCIDENT VIDEO CLIP AND ANALYSIS</b>				
The candidate uses technology to support analysis, reflection, and problem-solving strategies for instruction. <i>InTASC 9(d)</i>	The candidate <b>does not use technology</b> to support analysis, reflection, and problem-solving strategies for instruction.	The candidate <b>ineffectively uses technology</b> to support analysis, reflection, or problem-solving strategies for instruction.	The candidate <b>uses technology</b> to support analysis, reflection, and problem-solving strategies for instruction.	The candidate <b>effectively uses technology</b> to support a <b>thorough</b> use of analysis, reflection, and problem-solving strategies for instruction.
The candidate engages in ongoing learning opportunities to develop knowledge and skills in order to provide all learners with engaging curriculum and learning experiences. <i>InTASC 9(a)</i>	There was <b>no evidence</b> that the candidate engages in ongoing learning opportunities to plan to improve teaching and learning.	There was <b>minimal evidence</b> that the candidate engages in ongoing learning opportunities to plan to improve teaching and learning.	There was <b>evidence</b> that the candidate <b>effectively</b> engages in ongoing learning opportunities to plan to improve teaching and learning.	There was <b>extensive evidence</b> that the candidate <b>effectively</b> engages in ongoing learning opportunities to plan to improve teaching and learning.

Criteria	Does Not Meet Expectation (1)	Approaches Expectation (2)	Meets Expectation (3)	Exceeds Expectation (4)
<p>The candidate reflects on his/her personal biases and accesses resources to deepen his/her own understanding of a variety of individual differences to build relationships and create more relevant learning experiences.</p> <p><i>InTASC 9(e)</i></p>	<p>There is <b>no evidence</b> that the candidate reflects on his/her personal biases.</p> <p>The candidate did not access resources to deepen his/her own understanding of a variety of individual differences to build relationships and create more relevant learning experiences.</p>	<p>The candidate provides evidence that he/she reflects on his/her personal biases and accesses resources to deepen his/her own understanding of <b>limited</b> individual differences to build relationships and create relevant learning experiences.</p>	<p>The candidate provides evidence that he/she reflects on personal biases and accesses <b>appropriate</b> resources to deepen his/her own understanding of a <b>variety of individual differences</b> to build relationships and create more relevant learning experiences.</p>	<p>The candidate provides evidence that he/she <b>effectively</b> reflects on personal biases and accesses <b>multiple resources</b> to deepen his/her own understanding of a <b>variety of individual differences</b> to build relationships and create <b>engaging</b>, relevant learning experiences.</p>
<p><b>TOTAL POINTS EARNED:</b> _____ Divide total by 16 to find <b>RUBRIC MEAN</b> (out of 4.0): _____</p>				

**NOTES:**

\_\_\_\_\_  
Candidate Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Date

\_\_\_\_\_  
Mentor Teacher Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Date

\_\_\_\_\_  
Supervisor Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Date



## TEACHER CANDIDATE INSTRUCTION AND ASSESSMENT PLAN

### Assessment Objective

- The candidate will use knowledge of individual learning differences and assessment to develop an instructional plan for a student with developmental, learning, physical or linguistic differences, including a plan for assessing the student's progress.

### Rationale

Lesson planning is an essential skill for an educator. A lesson plan is a road map for instruction. When planning teachers and teacher candidates need to answer four main questions:

Who are my students? (Context/Student Needs)

What do my students need to know and be able to do? (Objectives)

How will I get all students to know and do the new tasks? (Leaching and learning)

How will I know they know what was taught? (Assessments)

The first step in planning is identifying the learning objectives for the lesson-based upon student abilities, challenges, and prior knowledge. Before developing specific learning activities, determine how you will assess if students have met the lesson objectives. Once you know how you will assess student learning, you can develop activities that align instruction with the assessment. Additionally, a teacher must consider student prior knowledge, how to differentiate to meet student needs, and how to do so within the time allotted. Lesson plans include pacing, transitions, checking for understanding, and ideas for re-teaching or extending learning based upon student needs.

The planning process is the same whether you are planning a lesson for a class or for an individual. For this assessment you will develop an instructional plan for a student with developmental, learning, physical or linguistic differences, including a plan for assessing the student's progress.

### Assessment Task Directions

Candidates will develop an individualized plan for a child with developmental, learning, physical, or linguistic differences within the context of the general environment and curriculum that includes the following sections:

**Section 1. Description of the individual student** that includes **cognitive, linguistic, social, emotional, and/or physical** developmental skill levels and abilities, interests **and** educational progress and **statement of educational need**.

**Section 2. Identification of and rationale for three learning objectives** that support meaningful learning outcomes for the student.

**Section 3. Description of and rationale for at least three** evidence-based **instructional strategies** that address the identified learning objectives and reflect the student's **cognitive, linguistic, social, emotional, and/or physical** developmental skill levels and abilities, interests **and** educational needs.

**Section 4. Description of and rationale for instructional adaptations** and accommodations needed, including the use of augmentative and alternative communication systems and assistive technologies or other appropriate technologies.

**Section 5.** Statement of **plan for the assessment and documentation** of the student's progress toward the identified objectives.

## Teacher Candidate Instruction and Assessment Plan Rubric

Criteria	Does Not Meet Standard 1	Approaches Standard 2	Meets Standard 3	Exceeds Standard 4
<b>Section 1</b>				
<b>Description of Individual Student</b>				
<p><b>The candidate regularly assesses individual and group performance in order to design and modify instruction to meet learners' needs in each area of development (cognitive, linguistic, social, emotional, and physical) and scaffolds the next level of development.</b></p> <p><i>InTASC 1(a)</i></p>	<p>The candidate does not provide a description or the description of student <b>does not</b> include assessment data <b>related to cognitive, linguistic, social, emotional, and/or physical</b> developmental skill levels and abilities, interests, <b>or</b> educational progress.</p>	<p>The candidate provides description of student that includes appropriate assessment data related to <b>some but not all</b> of the following: cognitive, linguistic, social, emotional, and/or physical developmental skill levels and abilities, interests, <b>or</b> educational progress.</p>	<p>The candidate provides description of student that includes appropriate assessment data on <b>all</b> of the following: cognitive, linguistic, social, emotional, and/or physical developmental skill levels and abilities, interests, and educational progress.</p> <p>The candidate describes impact of student characteristics on learning.</p>	<p>The candidate provides description of student that includes both appropriate and multiple forms of assessment data on <b>all</b> of the following: cognitive, linguistic, social, emotional, and/or physical developmental skill levels and abilities, interests, and educational learning need.</p> <p>The candidate describes <b>and</b> provides examples of impact of student characteristics on learning.</p>
<b>Statement of Educational Need</b>				
<p><b>The candidate effectively uses multiple and appropriate types of assessment data to identify each student's learning needs and to develop differentiated learning experiences.</b></p>	<p>The candidate <b>does not</b> address student educational needs or <b>inappropriately uses</b> assessment data to create a statement of educational need.</p>	<p>The candidate uses assessment data to create a statement of educational need that is <b>marginally</b> aligned with assessment results.</p>	<p>The candidate uses assessment data to create an <b>appropriate</b> statement of educational need that is <b>aligned</b> with assessment results.</p>	<p>The candidate <b>effectively</b> uses assessment data from <b>multiple sources</b> to create a <b>thorough and appropriate</b> statement of educational need that is <b>aligned</b> with assessment results.</p>

<i>InTASC 6(g)</i>				
<b>Section 2</b>				
<b>Identification of Learning Objectives</b>				
<b>The candidate individually and collaboratively selects and creates learning experiences that are appropriate for curriculum goals and content standards, and are relevant to learners.</b>	The candidate identifies learning objectives that are <b>either</b> (a) <b>incomplete</b> because related outcomes are not identified <b>or</b> (b) the objectives are <b>not directly related</b> to student educational need.	The candidate identifies learning objectives <b>without relevance</b> to student educational need.	The candidate identifies learning objectives with related outcomes that are <b>relevant</b> to individual student needs.	The candidate identifies <b>distinct</b> learning objectives with related outcomes that are <b>relevant</b> to individual student needs.
<i>InTASC 7(a)</i>				
<b>Identification of Rationale for Learning Objectives</b>				
<b>The candidate plans for instruction based on formative and summative assessment data, prior learner knowledge, and learner interest.</b>	The candidate <b>does not provide</b> rationales which are aligned to the specific learning objectives and/or the relationship of the learning objectives to student educational needs is <b>missing or unclear</b> .	The rationales provided <b>are not</b> be aligned to the specific learning objective and the relationship of the learning objectives to student educational needs is <b>unclear</b> .	The rationales provided <b>are aligned</b> with the learning objective and the relationship of learning objectives to student educational needs is <b>clearly</b> identified.	The rationales provided <b>are aligned</b> with the learning objective and the relationship of the learning objectives to student educational needs is <b>clearly and effectively</b> identified.
<i>InTASC 7(d)</i>				
<b>Section 3</b>				
<b>Description of Instructional Strategies</b>				
<b>The candidate plans how to achieve each student's learning goals, choosing appropriate strategies and accommodations, resources, and materials to differentiate instruction for</b>	The candidate <b>does not</b> identify instructional strategies or identifies instructional strategies that are <b>not related</b> to the learning objectives <b>or</b> student learning needs.	The candidate identifies instructional strategies that are <b>marginally</b> related to the learning objectives <b>or</b> student learning needs.	The candidate identifies <b>evidence-based</b> instructional strategies that are aligned to the learning objectives and student learning needs.	The candidate identifies <b>evidence-based</b> instructional strategies that are aligned to <b>specific</b> learning objectives and student learning needs.  The candidate

individuals and groups of learners.  <i>InTASC 7(b)</i>				provides <b>specific sources of</b> evidence for the instructional strategy.
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**Rationale for Instructional Strategies**

The candidate understands that each learner’s <b>cognitive, linguistic, social, emotional, and physical development influences learning and knows how to make instructional decisions that build on learners’ strengths and needs.</b>  <i>InTASC 1(e)</i>	The candidate <b>does not provide</b> rationales which are aligned to the specific instructional strategies <b>and/or</b> the relationship of instructional strategies to the learning objectives and student educational needs is <b>missing or unclear.</b>	The rationales provided <b>do not</b> aligned to the specific instructional strategies and, the relationship of the instructional strategies to the learning objectives that meet student educational needs is <b>unclear.</b>	The rationales provided <b>are aligned</b> with instructional strategies and, the relationship of the instructional strategies to the learning objectives that meet student educational needs is <b>clearly</b> identified.	The rationales provided <b>are aligned</b> with the strategies and, the relationship of the instructional strategies to <b>specific</b> learning objectives that meet student educational needs is <b>clearly and effectively</b> identified.
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**Section 4**

**Description of Instructional Adaptation**

The candidate accesses resources, supports, and <b>specialized assistance and services to meet particular learning differences or needs.</b>  <i>InTASC 2(f)</i>	The candidate <b>does not identify</b> either adaptations or accommodations to support student achievement of learning objectives.	The candidate identifies <b>either</b> adaptations or accommodations that <b>minimally support</b> student achievement of learning objectives.	The candidate identifies and describes appropriate adaptations or accommodations that <b>clearly support</b> student achievement of learning objectives.	The candidate identifies and thoroughly describes appropriate adaptations or accommodations that <b>clearly support</b> student achievement of learning objectives.
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**Rationale for Instructional Adaptation**

The candidate knows a range of evidence-based <b>instructional strategies,</b>	The candidate <b>does not provide</b> rationales that are aligned to the adaptations and	The rationales <b>marginally provides</b> evidence to support the	The rationales provide <b>adequate</b> evidence to support the adaptations and	The rationales provide <b>evidence-based support</b> for the specific adaptations and
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<p><b>resources, and technological tools and how to use them effectively to plan instruction that meets diverse learning needs.</b></p> <p><i>InTASC 7(k)</i></p>	<p>accommodations <b>and/or</b> the relationship of the adaptations and accommodations to student educational needs is <b>missing or unclear</b>.</p>	<p>adaptations and accommodations and the relationship of the adaptations and accommodations to student educational needs is <b>unclear</b>.</p>	<p>accommodations and the relationship of the adaptations and accommodations to student educational needs is <b>clearly identified</b>.</p>	<p>accommodations and the relationship of the adaptations and accommodations to student educational needs is <b>clearly and thoroughly</b> identified.</p>
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**Section 5 Assessment and Documentation of Student Progress**

<p><b>The candidate designs assessments that match learning objectives with assessment methods and minimizes sources of bias that can distort assessment results.</b></p> <p><i>InTASC 6(b)</i></p>	<p>The candidate <b>does not</b> describe an assessment plan that that evaluates all student learning objectives <b>or</b> describes a plan that <b>does not</b> directly measure all of the student learning objectives (e.g., is <b>not observable, measurable</b>).</p>	<p>The candidate describes an assessment plan that evaluates all student learning objectives but <b>does not</b> include documentation of <b>both</b> formative and summative measures that <b>does not</b> address possible assessment bias.</p>	<p>The candidate describes an assessment plan that evaluates all student learning objectives <b>and includes both</b> formative and summative assessments that minimize sources of bias.</p> <p>The candidate describes the assessment results that would prompt modification of instructional plans <b>and</b> those specific modifications.</p>	<p>The candidate describes an assessment plan that evaluates <b>all</b> student learning objectives, <b>includes</b> formative and summative assessments that minimize sources of bias and includes <b>multiple</b> data sources for each objective.</p> <p>The candidate describes <b>multiple</b> assessment results that would prompt modification of instructional plans <b>and</b> those specific modifications.</p>
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## UNIT PLAN Scoring Rubric

The unit plan will be evaluated using two different rubrics: *InTASC* and *NCTM*. Together, these two rubrics evaluate teacher candidates' ability to demonstrate a variety of NCTM SPA standards for the Planning assessment.

For each of the standards the following scoring criteria are used:

- 0 – unacceptable
- 1 – marginal
- 2 – meets expectations
- 3 – exceeds expectations

**In order to pass this assignment, teacher candidates need to earn a mean score of at least 2.0 on each of the rubrics. Should a unit plan earn less than a mean score of 2.0 on either rubric, the teacher candidate will be asked to redo the unit plan until the minimum standard is met.**

### EDCI 472/672 Unit Plan Rubric

#### INTASC Standards

	<b>Exceeds Expectations (3 points)</b>	<b>Meets Expectations (2 points)</b>	<b>Approaches Expectations (1 point)</b>	<b>Does Not Meet Expectations</b>
<b>Lesson Construction and Formatting</b>	Lesson and assignment are written in alignment with specified formatting. All accompanying materials/resources are included. Each resource is clear and appealing to students	Lesson and assignment are written in alignment with specified formatting. All accompanying materials/resources are included. Some resources are not clear and/or appealing to students.	Lesson and assignment are written in alignment with specified formatting. Some materials are missing and/or all materials are unclear to students.	Lesson and assignment are not written in alignment with specified formatting and/or all submitted accompanying materials are not clear to students.
<b>Goals/Objectives</b> <i>InTASC: 7</i>	All goals and objectives are written to describe learning <b><u>outcomes</u></b> and are aligned with state and NCTM standards. None are extraneous.	Some objectives/goals are not written to describe learning <b><u>outcomes</u></b> . Most of the objectives/goals are related to standards. None are extraneous.	Objectives/goals are not written as learning <b><u>outcomes</u></b> . Some of the objectives/goals are related to standards. Some are extraneous.	Objectives/goals are missing, unclear, or are unrelated to standards. Some or all are extraneous.

<p><b>Content</b> <i>InTASC: 1</i></p>	<p>Instruction focuses on the “big ideas” of mathematics and shows connections between and among concepts. Content is represented accurately and developed logically.</p>	<p>Instruction focuses on the “big ideas” of mathematics but some connections between and among concepts may be missing. Content is represented accurately but, at times, may have gaps in its logical development.</p>	<p>Instruction does not focus on the “big ideas” of mathematics and does not show connections between and among concepts. Content is, represented accurately but, at time, may have gaps in its logical development.</p>	<p>Instruction does not focus on the “big ideas” of mathematics and does not show connections between and among concepts. Content is not represented accurately and/or developed logically.</p>
<p><b>Student Learning</b> <i>InTASC: 2</i></p>	<p>All planned activities are developmentally appropriate and provide opportunities for students to engage in meaningful exploration of mathematics in the development of conceptual understanding and procedural knowledge.</p>	<p>Most planned activities are developmentally appropriate and provide opportunities for students to engage in meaningful exploration of mathematics in the development of conceptual understanding and procedural knowledge.</p>	<p>Some planned activities are developmentally appropriate and provide opportunities for students to engage in meaningful exploration of mathematics in the development of conceptual understanding and procedural knowledge.</p>	<p>None of the planned activities are developmentally appropriate nor do they provide opportunities for students to engage in meaningful exploration of mathematics in the development of conceptual understanding and procedural knowledge.</p>
<p><b>Instructional Activities</b> <i>InTASC: 4</i></p>	<p>Instruction regularly incorporates variety of activities, engages students in high-level thinking, is problem-/inquiry-based, and is creatively designed.</p>	<p>Instruction often incorporates a variety of activities, engages students in high-level thinking, is problem-/inquiry-based, and is creatively designed.</p>	<p>Instruction rarely incorporates a variety of activities, engages students in high-level thinking, is problem-/inquiry-based, and is creatively designed.</p>	<p>Instruction does not incorporate a variety of activities, engage students in high-level thinking, is not problem-/inquiry-based, and is not creatively designed.</p>



**NCTM Standard 1a: Content Knowledge**

Candidates should demonstrate and apply knowledge of mathematical content.

Plans include opportunities for students to do the following:

<b>Standard</b>	<b>Exceeds Expectations (3 points)</b>	<b>Meets Expectations (2 points)</b>	<b>Approaches Expectations (1 point)</b>	<b>Does Not Meet Expectations (0 points)</b>
1a.1 Demonstrate knowledge of major mathematical concepts, algorithms, and procedures	Lessons are designed to address the big ideas of secondary mathematics content. Throughout, students are consistently engaged in activities that address all 3 indicators.	Lessons are designed to address the big ideas of secondary mathematics content. Students are somewhat engaged in activities that address all 4 indicators.	Lessons are designed to address the big ideas of secondary mathematics content. Students are somewhat engaged in activities that address most of the indicators.	Lessons are not designed to address the big ideas of secondary mathematics content. Students are not engaged in activities that address most of the indicators.
1a.2 Make connections between and among mathematical domains	Lessons are designed to address the big ideas of secondary mathematics content. Throughout, students are consistently engaged in activities that address all 3 indicators.	Lessons are designed to address the big ideas of secondary mathematics content. Students are somewhat engaged in activities that address all 4 indicators.	Lessons are designed to address the big ideas of secondary mathematics content. Students are somewhat engaged in activities that address most of the indicators.	Lessons are not designed to address the big ideas of secondary mathematics content. Students are not engaged in activities that address most of the indicators.
1a.3 Apply mathematics to varied contexts	Lessons are designed to address the big ideas of secondary mathematics content.	Lessons are designed to address the big ideas of secondary mathematics content. Students	Lessons are designed to address the big ideas of secondary mathematics content.	Lessons are not designed to address the big ideas of secondary mathematics content. Students are not engaged in

	Throughout, students are consistently engaged in activities that address all 3 indicators.	are somewhat engaged in activities that address all 4 indicators.	Students are somewhat engaged in activities that address most of the indicators.	activities that address most of the indicators.
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**NCTM Standard 2: Mathematical Practices**

Candidates 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.

Plans include opportunities for students to engage in the following:

<b>Standard</b>	<b>Exceeds Expectations (3 points)</b>	<b>Meets Expectations (2 points)</b>	<b>Approaches Expectations (1 point)</b>	<b>Does Not Meet Expectations (0 points)</b>
2a Use problem solving to develop conceptual understanding, make conjectures and generalizations, and apply and adapt a variety of strategies	Lessons are designed to fully engage students in activities that exhibit the mathematical practice.	Lessons are designed to partially engage students in activities in the mathematical practice.	Lessons are designed to engage students in activities that minimally engage students in the mathematical practice.	Lessons are not designed to engage students in activities that address the mathematical practice.
2b Reason abstractly and quantitatively with attention to precision	Lessons are designed to fully engage students in activities that exhibit the mathematical practice.	Lessons are designed to partially engage students in activities in the mathematical practice.	Lessons are designed to engage students in activities that minimally engage students in the mathematical practice.	Lessons are not designed to engage students in activities that address the mathematical practice.
2c	Lessons are designed to fully	Lessons are designed to	Lessons are designed to	Lessons are not designed to engage

Formulate, represent, analyze, and interpret mathematical models	engage students in activities that exhibit the mathematical practice.	partially engage students in activities in the mathematical practice.	engage students in activities that minimally engage students in the mathematical practice.	students in activities that address the mathematical practice.
2d Use the language of mathematics (e.g., vocabulary and symbols) to communicate mathematical ideas to others	Lessons are designed to fully engage students in activities that exhibit the mathematical practice.	Lessons are designed to partially engage students in activities in the mathematical practice.	Lessons are designed to engage students in activities that minimally engage students in the mathematical practice.	Lessons are not designed to engage students in activities that address the mathematical practice.
2e Make connections between mathematical domains and the practices of problem solving, reasoning, communicating, connecting, and representing	Lessons are designed to fully engage students in activities that exhibit the mathematical practice.	Lessons are designed to partially engage students in activities in the mathematical practice.	Lessons are designed to engage students in activities that minimally engage students in the mathematical practice.	Lessons are not designed to engage students in activities that address the mathematical practice.
2f Model how the development of mathematical understanding within and among mathematical domains intersects with the mathematics practices of problem solving, reasoning communicating,	Lessons are designed such that mathematical content and understanding are fully integrated. with mathematics practice standards	Lessons are designed such that mathematical content and understanding are somewhat integrated. with mathematics practice standards	Lessons are designed such that mathematical content and understanding are minimally integrated. with mathematics practice standards	Lessons are designed such that mathematical content and understanding are NOT integrated. with mathematics practice standards

connecting, and representing.				
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**NCTM Standard 3: Content Pedagogy**

Candidates apply knowledge of curriculum standards for mathematics and their relationship to student learning

Lesson Plans include evidence of the following:

<b>Standard</b>	<b>Exceeds Expectations (3 points)</b>	<b>Meets Expectations (2 points)</b>	<b>Approaches Expectations (1 point)</b>	<b>Does Not Meet Expectations (0 points)</b>
3a Applying knowledge of curriculum standards for secondary mathematics and relationship to student learning within the lessons	Lessons are designed to demonstrate exceptional knowledge of the content pedagogy standard.	Lessons are designed to demonstrate proficient knowledge of the content pedagogy.	Lessons are designed to minimally demonstrate knowledge of content pedagogy.	Lessons are not designed to demonstrate knowledge of the content pedagogy standard.
3b Use of research to create rich mathematical learning experiences	Lessons are designed to demonstrate exceptional knowledge of the content pedagogy standard.	Lessons are designed to demonstrate proficient knowledge of the content pedagogy.	Lessons are designed to minimally demonstrate knowledge of content pedagogy.	Lessons are not designed to demonstrate knowledge of the content pedagogy standard.
3c1 Use of instructional technologies to help students build conceptual understanding and procedural fluency	Lessons are designed to demonstrate exceptional knowledge of the content pedagogy standard.	Lessons are designed to demonstrate proficient knowledge of the content pedagogy.	Lessons are designed to minimally demonstrate knowledge of content pedagogy.	Lessons are not designed to demonstrate knowledge of the content pedagogy standard.
3c2 A variety of strategies and differentiated instruction for diverse populations	Lessons are designed to demonstrate exceptional knowledge of the content pedagogy standard.	Lessons are designed to demonstrate proficient knowledge of the content pedagogy.	Lessons are designed to minimally demonstrate knowledge of content pedagogy.	Lessons are not designed to demonstrate knowledge of the content pedagogy standard.
3d Opportunities for communication about mathematics and to make connections among mathematics other	Lessons are designed to demonstrate exceptional knowledge of the content pedagogy	Lessons are designed to demonstrate proficient knowledge of the content pedagogy.	Lessons are designed to minimally demonstrate knowledge of content pedagogy.	Lessons are not designed to demonstrate knowledge of the content pedagogy standard.

content areas, and the real world.	standard.			
3e Implement techniques related to student engagement and communication (e.g, selecting high-quality tasks, guiding mathematical discussions, identifying key mathematical ideas, addressing student misconceptions, and employing a range of strategies.)	Lessons are designed to demonstrate exceptional knowledge of the content pedagogy standard.	Lessons are designed to demonstrate proficient knowledge of the content pedagogy.	Lessons are designed to minimally demonstrate knowledge of content pedagogy.	Lessons are not designed to demonstrate knowledge of the content pedagogy standard.
3f Use of formative and summative assessment to inform instruction	Lessons are designed to demonstrate exceptional knowledge of the content pedagogy standard.	Lessons are designed to demonstrate proficient knowledge of the content pedagogy.	Lessons are designed to minimally demonstrate knowledge of content pedagogy.	Lessons are not designed to demonstrate knowledge of the content pedagogy standard.

**NCTM Standard 4: Mathematical Learning Environment**

Candidates exhibit knowledge of adolescent learning, development, and behavior and use this knowledge to create learning opportunities that are grounded in mathematics education research in which students are actively learning and building on prior knowledge and skills.

Plans include:

<b>Standard</b>	<b>Exceeds Expectations (3 points)</b>	<b>Meets Expectations (2 points)</b>	<b>Approaches Expectations (1 point)</b>	<b>Does Not Meet Expectations (0 points)</b>
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<p>4a</p> <p>Knowledge of adolescent learning, development, and behavior and foster positive disposition toward mathematics learning</p>	<p>Lessons are designed to demonstrate exceptional knowledge of fostering a productive mathematics-learning environment according to the standard.</p>	<p>Lessons are designed to demonstrate proficient knowledge of fostering a productive mathematics-learning environment. Students are somewhat engaged in activities that address the indicator.</p>	<p>Lessons are designed to demonstrate developing knowledge of fostering a productive mathematics-learning environment. Students are somewhat engaged in activities that address the indicator.</p>	<p>Lessons are not designed to demonstrate knowledge of fostering a productive mathematics-learning environment. Students are not engaged in activities that address the indicator.</p>
<p>4b</p> <p>Developmentally appropriate, sequential, and challenging learning opportunities</p>	<p>Lessons are designed to demonstrate exceptional knowledge of fostering a productive mathematics-learning environment according to the standard.</p>	<p>Lessons are designed to demonstrate proficient knowledge of fostering a productive mathematics-learning environment. Students are somewhat engaged in activities that address the indicator</p>	<p>Lessons are designed to demonstrate developing knowledge of fostering a productive mathematics-learning environment. Students are somewhat engaged in activities that address the indicator.</p>	<p>Lessons are not designed to demonstrate knowledge of fostering a productive mathematics-learning environment. Students are not engaged in activities that address the indicator.</p>
<p>4c</p> <p>Knowledge of individual differences, including cultural and language diversity</p>	<p>Lessons are designed to demonstrate exceptional knowledge of fostering a productive mathematics-learning environment according to the standard.</p>	<p>Lessons are designed to demonstrate proficient knowledge of fostering a productive mathematics-learning environment. Students are somewhat engaged in activities that</p>	<p>Lessons are designed to demonstrate developing knowledge of fostering a productive mathematics-learning environment. Students are somewhat engaged in activities that</p>	<p>Lessons are not designed to demonstrate knowledge of fostering a productive mathematics-learning environment. Students are not engaged in activities that</p>

		address the indicator	address the indicator.	address the indicator.
4e Use of tools (e.g., manipulatives, physical models, drawings, and mathematics specific technologies) to enhance teaching and learning	Lessons are designed to demonstrate exceptional knowledge of fostering a productive mathematics-learning environment according to the standard.	Lessons are designed to demonstrate proficient knowledge of fostering a productive mathematics-learning environment. Students are somewhat engaged in activities that address the indicator	Lessons are designed to demonstrate developing knowledge of fostering a productive mathematics-learning environment. Students are somewhat engaged in activities that address the indicator.	Lessons are not designed to demonstrate knowledge of fostering a productive mathematics-learning environment. Students are not engaged in activities that address the indicator.



**Student Name:**

**Semester:**

**Rubric Ratings:**

<b>INTASC Standard</b>	<b>Rating</b>
1. Content	
2. Student Learning	
3. Diverse Learners	
4. Instruction	
5. Learning Environment	
6. Communication	
7. Planning	
8. Assessment	
9. Reflection	
10. Collaboration	
<i>Mean Score</i>	

<b>NCTM Standard</b>	<b>Rating</b>
Content Knowledge	
Mathematical Practices	
Content Pedagogy	
Mathematical Learning Environment	
<i>Mean Score</i>	

**A minimum mean rating of 2.0 is required. Any standards receiving a zero rating must be re-submitted.**

“Approaches Expectations” or better rating in all standards: \_\_\_\_\_ YES \_\_\_\_\_ NO

**Strengths of the Unit Plan:**

## **Areas to Further Develop:**

### **IMPORTANT INFORMATION FOR LICENSURE COMPLETION**

#### Student Clinical Practice: Internship Requirements

##### **Testing**

Beginning with Spring 2015 internships, **all** official and passing test scores must be submitted and in the Mason system (i.e. Banner/PatriotWeb) by the internship application deadline. Allow a minimum of six weeks for official test scores to arrive at Mason. Testing too close to the application deadline means scores will not arrive in time and the internship application will not be accepted.

##### **Required tests:**

- Praxis Core Academic Skills for Educators Tests (or qualifying substitute)
- VCLA
- Praxis II (Content Knowledge exam in your specific endorsement area)

For details, please check <http://cehd.gmu.edu/teacher/test/>

##### **Endorsements**

Please note that ALL endorsement coursework must be completed, with all transcripts submitted and approved by the CEHD Endorsement Office, prior to the internship application deadline. Since the internship application must be submitted in the semester prior to the actual internship, please make an appointment to meet with the Endorsement Specialist and plan the completion of your Endorsements accordingly.

##### **CPR/AED/First Aid**

Beginning with spring 2015 internships, verification that the Emergency First Aid, CPR, and Use of AED Certification or Training requirement must be submitted and in the Mason system (i.e. Banner/PatriotWeb) by the application deadline. Students must submit one of the "acceptable evidence" documents listed at <http://cehd.gmu.edu/teacher/emergency-first-aid> to CEHD Student

and Academic Affairs. In order to have the requirement reflected as met in the Mason system, documents can be scanned/e-mailed to [CEHDacad@gmu.edu](mailto:CEHDacad@gmu.edu) or dropped-off in Thompson Hall, Suite 2300.

### **Background Checks/Fingerprints**

All local school systems require students to complete a criminal background check through their human resources office (not through George Mason University) **prior to beginning the internship**. Detailed instructions on the process will be sent to the student from either the school system or Mason. Students are **strongly advised** to disclose any/all legal incidents that may appear on their records. The consequence of failing to do so, whether or not such incidents resulted in conviction, is termination of the internship.

#### **Please Note**

Your G-Number must be clearly noted (visible and legible) on the face of the document(s) that you submit.