Institutional Effectiveness
2022-2023

Program: Multidisciplinary Studies BS
College and Department: College of Education, Department of Curriculum & Instruction
Contact: Jeremy Wendt, Chairperson
Mission:

The mission of the Department of Curriculum & Instruction is to enhance education and policy for the well-being of society through the creation, communication and application of new knowledge; preparation of scholars, researchers, educators and other professionals to meet the needs of our increasingly diverse, global, technological society; and outreach initiatives engaged with matters related to the local community, state, nation, and world.

Mission Brief: Learn from the past. Impact the present. Focus on the future.

Vision: Evidence-based, student-focused, future-oriented education for life-long learners.

Attach Curriculum Map (Educational Programs Only): *See Appendix 1.

MULTIDISCIPLINARY STUDIES BS OUTCOME 1

Define Outcome:
Program candidates will demonstrate content and pedagogical knowledge and skills by meeting or exceeding passing scores on the respective state licensure exam as set by the State Board of Education.

Assessment Methods:
State licensure exams (Praxis). Candidates take between one and six licensure exams in order to be recommended for licensure. The Praxis subject assessments measure candidates' content knowledge of the subjects they teach. The subject assessments measure subject-specific teaching skills and content knowledge. Validity for the assessments is evidenced through multiple means, including job analysis; item writing and reviewing; standard-setting studies; test reviews; and ongoing reviews. Reliability is addressed via the standard error of measurement, reliability of classification, and reliability of scoring. Praxis is a proprietary assessment developed, regulated, and scored by ETS, and the Tennessee State Board of Education sets candidate cut scores.

Criteria for Success (Thresholds for Assessment Methods):
Praxis: Nearly all data reported to the university by testing organizations is reported one calendar year behind IE reporting cycles. Program candidates will demonstrate content and pedagogical knowledge and skills by meeting or exceeding passing scores on the respective state licensure exam as set by the State Board of Education.

Results and Analysis:

With changes to the cycle of data collection for IE, the department has complete data sets for the most recent completers (2022-2023).

Student Learning Outcome 1: Program candidates will demonstrate content and pedagogical knowledge and skills by meeting or exceeding passing scores on the respective state licensure exam as set by the State Board of Education. PRAXIS content exams: All candidates must pass their respective Praxis content exam prior to entering residency I/student teaching. Praxis summary reports show EPP scores compared to state and national averages, as well as a breakdown of our candidates in each quartile. All summary reports are posted on the EPP's website. Statistical results for TTU were available for the academic years in which the minimum number of candidates is met. Some programs did not have an exam in which more than five candidates were scored; therefore, no statistical results were provided.

For the 2022-23 academic year, the Middle School ELA and Middle School Social Studies sections had less than five candidates. No statistical scores were reported to compare with at the State and National levels. Middle School Math, Middle School Science, K-12 ESL, and K-12 Computer Science rates are reported in the eight tables below.

Table 1. MDS: Content Knowledge - Middle School ELA PRAXIS (5047)

	TTU			State		
Year	N	Pass Rate	Mean	N	Pass Rate	Mean
2019-2020	2	*	*	96	41.33	158.37
2020-2021	4	*	*	158	47.41	160.14
2021-2022	4	*	*	129	42.31	158.61
2022-2023	2	*	*	107	37.18	157.69

Table 2. MDS: Content Knowledge - Middle School Math PRAXIS (5164)

	TTU			State		
Year	N	Pass Rate	Mean	N	Pass Rate	Mean
2022-2023	25	92	171.76	254	71.65	162.58

Table 3. MDS: Content Knowledge - Middle School Math PRAXIS (5169)

	TTU			State		
Year	N	Pass Rate	Mean	N	Pass Rate	Mean
2019-2020	4	*	*	157	56.69	164.6
2020-2021	10	60	165.5	275	57.82	164.59
2021-2022	29	58.62	165.31	250	54.8	163.34

Table 4. MDS: Content Knowledge - Middle School Science PRAXIS (5442)

	TTU			State		
Year	N	Pass Rate	Mean	N	Pass Rate	Mean
2021-2022	6	83.33	165.67	99	61.62	154.57
2022-2023	6	33.33	149.83	118	60.17	153.8

Table 5. MDS: Content Knowledge - Middle School Science PRAXIS (5440)

	TTU			State		
Year	N	Pass Rate	Mean	N	Pass Rate	Mean
2019-2020	3	*	*	87	60.92	153.1
2020-2021	8	62.5	150.5	136	62.5	151.2
2021-2022	2	*	*	27	74.07	145.33

Table 6. MDS: Content Knowledge - Middle School SS PRAXIS (5089)

	TTU			State		
Year	N	Pass Rate	Mean	N	Pass Rate	Mean
2019-2020	1	*	*	41	82.93	164.12
2020-2021	2	*	*	63	82.54	161.83
2021-2022	3	*	*	60	83.33	165.55
2022-2023	4	*	*	54	79.63	161.11

Table 7. MDS: Content Knowledge - K-12 ESL PRAXIS (5362)

	TTU			State		
Year	N	Pass Rate	Mean	N	Pass Rate	Mean
2019-2020	10	100	178.6	274	96.35	175.92
2020-2021	10	100	181.9	406	93.35	173.6
2021-2022	28	92.86	172.29	710	94.93	173.72
2022-2023	20	100	165.3	1044	93.01	173.21

Table 8. MDS: Content Knowledge - K-12 Computer Science PRAXIS (5652)

	TTU			State		
Year	N	Pass Rate	Mean	N	Pass Rate	Mean
2019-2020	-	-	-	-	-	-
2020-2021	1	*	*	3	*	*
2021-2022	-	-	-	3	*	*
2022-2023	6	100	162.33	10	90	161.6

Use of Results to Improve Outcomes:
The availability and request for high-demand computer science education courses was initiated by faculty and integrated into several Middle School programs of study. More career pathways and educational expertise can be built and evaluated through this program modification as well as meet the demand for the State of TN's new computer science education requirements at the middle and high school levels. Faculty across the specialty areas in ELED (Math, Science, Literacy, Social Studies) have participated in several key initiatives that will assist in the continuance of successful Praxis and edTPA scores. Partnerships with Deans for Impact to build and develop HQIM (High Quality Instructional Models) along with participation in the Lead for Literacy network are examples of the numerous ways faculty support assurance of quality and success of candidates.

As part of the department's efforts to increase the scores on the TEAM rubric, a new tool is being implemented that will better prepare candidates for the classroom and future use of the TEAM rubric. The Aspiring Teacher Rubric (ATR) is a nationally certified valid and reliable instrument that is designed to work at a more introductory level than the TEAM rubric. With Fall 2023 implementation, we expect data and results to be available for the next IE report in Fall 2024.

MULTIDISCIPLINARY STUDIES BS OUTCOME 2

Define Outcome:
Program candidates will demonstrate content and pedagogical knowledge and skills by meeting or exceeding a passing score on the respective performance-based subject-specific assessment as set by the State Board of Education.

Assessment Methods:
Performance-based subject-specific assessment. The edTPA is a performance-based assessment that assesses teaching behaviors that focus on student learning. edTPA is a proprietary, nation-wide assessment, developed by SCALE/Stanford and administered by Pearson. It is available in 27 individual content areas as a multiple-measures system that includes two primary components: 1) teaching-related performance tasks embedded in clinical practice that focus on planning, instruction, assessment, academic language, and analysis of teaching; 2) a three to five day documented learning segment. edTPA was nationally validated in 2013 to establish validity and reliability. The edTPA is professionally scored by Pearson, and the Tennessee State Board of Education sets candidate cut scores.

Criteria for Success (Thresholds for Assessment Methods):
edTPA: Program candidates will demonstrate content and pedagogical knowledge and skills by meeting or exceeding a passing score on the respective performance-based subject-specific assessment as set by the State Board of Education.

Results and Analysis:

Outcome 2: Program candidates will demonstrate content and pedagogical knowledge and skills by meeting or exceeding a passing score on the respective performance-based subject-specific assessment as set by the State Board of Education. edTPA: edTPA is a performance-based assessment used to measure pedagogical skills and pedagogical content knowledge. It shows what candidates can do, rather than what they plan to do. It is holistic and reflective as candidates integrate learning from across the curriculum and examine teaching practices. The portfolio includes 15 rubrics across 3 tasks (planning, instruction, and assessment) to demonstrate teacher effectiveness. In 2017, the Tennessee State Board of Education voted to require edTPA of all teacher candidates seeking licensure in the state. This requirement went into effect January 1, 2019; however, Tennessee Tech progressively implemented edTPA in 2012 for all programs with strong support for both candidates and faculty. Currently, candidates complete the edTPA during the residency II/student teaching clinical experience; each rubric is scored on a 5-point scale. Over the past three years, TTU has consistently produced total mean scores higher than State and National levels. This trend was also observed in Middle Childhood Math portfolios completed by our Middle School candidates across the three years aforementioned. The exception was English Language Learners, which did not exceed State or National levels for total mean score in 2022-23.

Table 1. Total mean scores for TTU, State, and National Levels edTPA

Year	TTU	State	National
2019-2020	47	45.8	43.7
2020-2021	45.5	45.2	43.1
2021-2022	46.2	45.1	42.9
2022-2023	46.6	45.1	42.8

For the 2022-23 academic year, the total mean score for TTU (46.6) was higher than State and National total mean scores.

Table 2. edTPA data for Middle Childhood ELA

TTU			State			National		
Year	N	Mean	Year	N	Mean	Year	N	Mean
2019-2020	-	-	2019-2020	13	52.7	2019-2020	524	47.2
2020-2021	-	-	2020-2021	14	47.2	2020-2021	343	44.9
2021-2022	2	60	2021-2022	14	51.3	2021-2022	352	45.1

2022-2023	-	-	2022-2023	14	49.4	2022-2023	319	46.4

Table 3. edTPA data for Middle Childhood History/Social Studies

TTU			State			National		
Year	N	Mean	Year	N	Mean	Year	N	Mean
2019-2020	2	49.5	2019-2020	14	46.9	2019-2020	419	45.1
2020-2021	1	46	2020-2021	10	44.9	2020-2021	311	43.9
2021-2022	-	-	2021-2022	10	47.7	2021-2022	285	44.9
2022-2023	-	-	2022-2023	15	49	2022-2023	288	44.9

Table 4. edTPA data for Middle Childhood Math

TTU			State			National		
Year	N	Mean	Year	N	Mean	Year	N	Mean
2019-2020	5	49	2019-2020	55	44.9	2019-2020	734	43.2
2020-2021	7	47.6	2020-2021	43	47.3	2020-2021	509	43.6
2021-2022	2	50.5	2021-2022	58	46.7	2021-2022	545	44.3
2022-2023	5	49.4	2022-2023	67	45.9	2022-2023	420	43.8

Table 5. edTPA data for Middle Childhood Science

TTU			State			National		
Year	N	Mean	Year	N	Mean	Year	N	Mean
2019-2020	17	43.4	2019-2020	15	45.4	2019-2020	430	44.3
2020-2021	-	-	2020-2021	16	45.6	2020-2021	305	42.8
2021-2022	-	-	2021-2022	27	45.3	2021-2022	381	43.5
2022-2023	-	-	2022-2023	29	45	2022-2023	318	43.9

Table 6. edTPA data for English Language Learners

TTU			State			National		
Year	N	Mean	Year	N	Mean	Year	N	Mean
2019-2020	-	-	2019-2020	33	49.8	2019-2020	583	46.6
2020-2021	6	44.8	2020-2021	32	47.1	2020-2021	239	45.2
2021-2022	4	49.3	2021-2022	49	48.5	2021-2022	280	44.8
2022-2023	1	43	2022-2023	28	47.2	2022-2023	223	45.1

For the 2022-23 academic year, the total mean scores were reported for TTU in Middle Childhood Math and English Language Learners. The mean for TTU candidates attempting the Math edTPA was higher than the state and national averages. The mean for English Language Learners was slightly lower than state and national, although still above the required passing score for state licensure. Since TTU had no candidates (or no available data) scored during the 2022-23 year for the other categories, no mean score data were reported.

Use of Results to Improve Outcomes:

The availability and request for high-demand computer science education courses was initiated by faculty and integrated into several Middle School programs of study. More career pathways and educational expertise can be built and evaluated through this program modification as well as meet the demand for the State of TN's new computer science education requirements at the middle and high school levels. Faculty across the specialty areas in ELED (Math, Science, Literacy, Social Studies) have participated in several key initiatives that will assist in the continuance of successful Praxis and edTPA scores. Partnerships with Deans for Impact to build and develop HQIM (High Quality Instructional Models) along with participation in the Lead for Literacy network are examples of the numerous ways faculty support assurance of quality and success of candidates.

As part of the department's efforts to increase the scores on the TEAM rubric, a new tool is being implemented that will better prepare candidates for the classroom and future use of the TEAM rubric. The Aspiring Teacher Rubric (ATR) is a nationally certified valid and reliable instrument that is designed to work at a more introductory level than the TEAM rubric. With Fall 2023 implementation, we expect data and results to be available for the next IE report in Fall 2024.

MULTIDISCIPLINARY STUDIES BS OUTCOME 3

Define Outcome:
Program candidates will demonstrate content and pedagogical knowledge and skills in their clinical practice by scoring at or above expectations on the TEAM rubric.

Assessment Methods:
Tennessee Educator Acceleration Model (TEAM). In 2011 the State Department of Education implemented the Tennessee Educator Acceleration Model (TEAM) evaluation rubric—a comprehensive student outcomes-based statewide educator evaluation system. The majority of Tennessee educators across all content areas are observed multiple times throughout the year using this observation instrument developed by the State. This program uses the TEAM rubric as the primary assessment tool for evaluating teacher candidate performance and application of content knowledge and pedagogical skills during clinical practice. The TEAM rubric evaluates educators across three primary domains: instruction, planning, environment. Educators are rated across all domains on a scale of 1 (significantly below expectations) to 5 (significantly above expectations). The program chose to use TEAM to evaluate its teacher candidates in an effort to familiarize them with and best prepare them for this rigorous evaluation of teachers across Tennessee.

Criteria for Success (Thresholds for Assessment Methods):
TEAM: Program candidates will demonstrate content and pedagogical knowledge and skills in their clinical practice by scoring at or above expectations on the TEAM rubric.

Results and Analysis:
Outcome 3: TEAM: In 2011, the State Department of Education implemented the Tennessee Educator Acceleration Model (TEAM) evaluation rubric – a comprehensive, student outcomes-based, statewide educator evaluation system. The majority of Tennessee educators across all content areas are observed multiple times throughout the year using this observation instrument developed by the State (TEAM Rubric). The EPP uses the TEAM rubric as the primary assessment tool for evaluating teacher candidate performance during clinical experiences. The TEAM rubric evaluates educators across 3 primary domains: instruction, planning, and environment. Educators are rated across all domains on a scale of 1 (significantly below expectations) to 5 (significantly above expectations). The TEAM rubric aligns with InTASC standards 1-8, demonstrating candidate mastery of Learner and Learning, Content, and Instructional Practice standards. First, the TEAM domain of Instruction (broken into 12 specific components) closely aligns to InTASC standards 1-5. Second, the TEAM domain of Planning (3 components) aligns to InTASC standards 6-8. Lastly, the TEAM domain of Environment (4 components) aligns to InTASC standards 2-3. TEAM rubric scores at and above expectations demonstrate candidate mastery of InTASC standards 1-8.

The EPP chose to use TEAM to evaluate its teacher candidates in an effort to familiarize them with and best prepare them for this rigorous evaluation of teachers across Tennessee. Residency candidates are formally evaluated 3 times by a university supervisor and 2 times by a mentor teacher using the TEAM rubric, for a total of 5 TEAM evaluations across the residency year. The 3-year trend of university supervisor evaluations shows little change in mean scores across all 3 domains. Similarly, student teachers are formally evaluated 2 times by the university supervisor and once by the mentor teacher, for a total of 3 formal TEAM evaluations across student teaching (due to the 1-semester time limit versus 1.5 semesters in residency). See TEAM Evaluation Data for TEAM data across MDS candidates below. Over the past three years in the MDS concentrations, TEAM data has improved.

Table 1. TEAM data for MDS - Res I & II

TTU				
Year	**N**	**Instruction**	**Planning**	**Environment**
2019-2020	**15**	**3.86**	**3.89**	**4.15**
2020-2021	**22**	**3.68**	**3.76**	**4.03**
2021-2022	**16**	**3.97**	**3.85**	**4.35**
2022-2023	**14**	**4.02**	**4.14**	**4.36**

Use of Results to Improve Outcomes:

The availability and request for high-demand computer science education courses was initiated by faculty and integrated into several Middle School programs of study. More career pathways and educational expertise can be built and evaluated through this program modification as well as meet the demand for the State of TN's new computer science education requirements at the middle and high school levels. Faculty across the specialty areas in ELED (Math, Science, Literacy, Social Studies) have participated in several key initiatives that will assist in the continuance of successful Praxis and edTPA scores. Partnerships with Deans for Impact to build and develop HQIM (High Quality Instructional Models) along with participation in the Lead for Literacy network are examples of the numerous ways faculty support assurance of quality and success of candidates.

As part of the department's efforts to increase the scores on the TEAM rubric, a new tool is being implemented that will better prepare candidates for the classroom and future use of the TEAM rubric. The Aspiring Teacher Rubric (ATR) is a nationally certified valid and reliable instrument that is designed to work at a more introductory level than the TEAM rubric. With

Fall 2023 implementation, we expect data and results to be available for the next IE report in Fall 2024.

Summative Evaluation:
The availability and request for high-demand computer science education courses was initiated by faculty and integrated into several Middle School programs of study. More career pathways and educational expertise can be built and evaluated through this program modification as well as meet the demand for the State of TN's new computer science education requirements at the middle and high school levels. Faculty across the specialty areas in ELED (Math, Science, Literacy, Social Studies) have participated in several key initiatives that will assist in the continuance of successful Praxis and edTPA scores. Partnerships with Deans for Impact to build and develop HQIM (High Quality Instructional Models) along with participation in the Lead for Literacy network are examples of the numerous ways faculty support assurance of quality and success of candidates.

As part of the department's efforts to increase the scores on the TEAM rubric, a new tool is being implemented that will better prepare candidates for the classroom and future use of the TEAM rubric. The Aspiring Teacher Rubric (ATR) is a nationally certified valid and reliable instrument that is designed to work at a more introductory level than the TEAM rubric. With Fall 2023 implementation, we expect data and results to be available for the next IE report in Fall 2024.

Assessment Plan Changes:
As part of the department's efforts to increase the scores on the TEAM rubric, a new tool is being implemented that will better prepare candidates for the classroom and future use of the TEAM rubric. The Aspiring Teacher Rubric (ATR) is a nationally certified valid and reliable instrument that is designed to work at a more introductory level than the TEAM rubric. With Fall 2023 implementation, we expect data and results to be available for the next IE report in Fall 2024.

Appendix 1: Crosswalk Middle Grades Math

Key Assessments TTU Middle School Math Program Selected Coursework		Key Assessment	Description of Key Assessment
6-8 Math Curriculum			
Freshman Year	FOED 2011-Intro to Teaching & Technology	Disposition, Annotated Bibliography	In the Disposition, teaching candidates describe their philosophy of teaching and how it relates to their students' learning. In the Annotated Bibliography, teaching candidates provide a list of references from their research, which is relevant to the grade level and subject area(s) they will be teaching.
	FOED 1820-Intro to Field Experience **OR**	Virtual Field Experience, Problem-Based Learning (PBL)	In the Virtual Field Experience, teaching candidates watch various videos of real classrooms and use the TEAM rubric and evaluation form. They also write an essay which reflects on their favorite virtual field experience video, and giving reasons why they thought the teacher was effective. In the Problem-Based Learning unit, teaching candidates are given an authentic real-world scenario that teachers may face. They must work in a group to research and develop a solution, which must be presented to the entire class.
	FOED 1822-Intro to Field Experience & Orientation	Virtual Field Experience, Problem-Based Learning (PBL)	In the Virtual Field Experience, teaching candidates watch various videos of real classrooms and use the TEAM rubric and evaluation form. They also write an essay which reflects on their favorite virtual field experience video, and giving reasons why they thought the teacher was effective. In the Problem-Based Learning unit, teaching candidates are given an authentic real-world scenario that teachers may face. They must work in a group to research and develop a solution, which must be presented to the entire class.
	MATH 1410-Survey of Elem Math I	3 Content Tests & Comprehensive Final Exam	Tests in this course span topics related to addition, subtraction, multiplication, and division across all number systems (whole numbers, integers, rational numbers, etc.). Each assessment specifically asks students to explain reasoning with pictures/words to model how they would respond to students in their classes.
	MATH 1420-Survey of Elem Math II	3 Content Tests & Comprehensive Final Exam	Tests in this course span topics related to algebra, probability, statistics, and geometry. Each assessment specifically asks students to explain reasoning with pictures/words to model how they would respond to students in their classes.
Sophomore Year	EDPY 2200-Educational Psychology	1. Seven reflection papers 2. Group presentation	1. Each reflection paper will be based on candidates' engagement and expressed level of critical thinking abilities related to learning outcomes regarding personality, motivation, self-perceptions, psychology of teachinG; 2. The Group Presentation will be relative to learning outcome 4 (Students will develop a more open attitude and a greater appreciation toward individual and cultural diversity); will include a minimum of 3 scholarly articles; APA references and format; proper grammar, spelling, fuency, and clarity; a detailed handout and grading rubric.
	FOED 3010-Integrating Instr. Technology into the Classroom	A) Technology Integrated Lesson Plan, B) Instructional Video project	A) Technology Integrated Lesson Plan: Students design a lesson in their content area in which they integrate and apply various technologies to several key areas, including assessment, technology-driven teaching strategies, fluency development, and digital media creation. B) Instructional Video project: Students plan, storyboard, film, edit, and present a video connected to content standards in their concentration.
	HEC 3500-Dev Middle Childhood/Adolescence	Exams	Exams assess student understanding of concepts related to middle childhood and adolescent development taught during lecture.
		Position Papers	Position papers provide students with an opportunity to choose a position on a particular issue in middle childhood and/or adolescent development. They should research the topic and become familiar with both the pros and cons of the issue.
		Discussion and Debate	While this activity does not contribute to final grades, students are expected to be able to articulate themselves when discussing the position they researched on for their position papers. It is an expected requirement for the position paper assignment.
	ESLP 4100-ESL Methods & Materials for PK-12	1. Teaching Philosophy 2. Multicultural Family Engagement Event 3. Cultural Exploration Project	1. As more and more ELLs enter the U.S. school systems nationwide, it is essential that your teaching philosophy will reflect the current educational and social changes. In a two double-spaced page document present your philosophy of teaching. Make sure your work addresses teaching ELLs in a general curriculum classroom. Please make sure to include current (up to 5 years old) peer-reviewed research sources (2 or 3) to support your educational stand. Also please, include reference list. All work should follow the guidelines of the APA 6th edition manual. 2. In a small group in and out of class you will develop a program plan for family engagement night that would involve work with ELLs children and families (math night, literacy night, science night, open house etc.). Make sure the activities are engaging for all learners and that primarily focus of the even is MULTICULTURAL EDUCATION. Demonstrate your plans in a 10-15 min presentation on an assigned syllabus date. Format of the presentation is free to group choice and can include technology. Examples: PowerPoint, Prezi, Video etc. Handout of the event's agenda required. 3. The purpose of this project is to learn more about a culture represented in our school systems. Students will work independently or with a partner to select a culture represented in our schools. Examples may include: Cherokee, Somali, Syrian, Saudi, Hispanic, Chinese. Students will prepare a technology-centered presentation (Animoto, Prezi, etc.) that highlights important information relevant and helpful to other teachers. Only work submitted into TK20 will be graded.
	FOED 3820-Field Experience in Education	Classroom Observation	Students are observed teaching a lesson in the mentor teacher's classroom. The TEAM Rubric is used as the basis of this evaluation.
	READ 3312-Literacy II: Middle School Reading Program	1. Children's Literature Project 2. Strategy Presentation 3. Lesson Plan	1. CLP-Students select and read 32 children's books from varying genres and authors. Students read the books, provide a synopsis of each, and detail literacy strategies they will use to teach the book. 2. Strategy Presentation-Students select and research a literacy strategy. Students present their information to the class and demonstrate how to use the strategy in a classroom. 3. Students write a full lesson plan following the TTU template.

	SEED 4422-Teaching Math w/Technology	Exploring Triangle Centers using SketchPad; Excel Gradebook; Technology Purchase Plan	**Exploring Triangle Centers using SketchPad**: Students using Geometer's Sketchpad software to explore all four triangle centers, the nine-point circle, and the Euler Line. Sketches include proofs of geometric ideas. **Excel Gradebook**: Students create a gradebook using Excel that includes formulas for all calculations. **Technology Purchase Plan**: Students identify the mathematics specifc technologies they want in their future classroom, design a fundraising plan to obtain these items, and write a reflective paper on their use in the teaching of mathematics.
	SEED 4322-Teaching Algebra in Middle/HS	Illuminations Presentation; Instructional Task; Mathematical Letter Writing	**Illuminations Presentation**: Select a Lesson or Interactive from http://illuminations.nctm.org/.) and present it to the class using the rubric. You will turn in to me: (1) an activity/lesson form, (2) an outline of your presentation plan, and (3) the "guided-discovery" handouts you provide to the class. **Instructional Task**: Students choose a set of standards from Grades 7-12 mathematics and write an instructional task modeled after those on the TNCore website. Tasks are submitted to TN DoE for review for publication on the website. **Mathematical Letter Writing**: To better prepare you for teaching mathematics in grades 7–12, you will complete a 10-week mathematical writing project in which you are paired with a high school student. You will exchange weekly "math letters" (per guidelines described in class) with the student and provide him/her with quality feedback. Content should span a range of course topics aligned to CCSSM.
	SPED 3000- Teach Persons w/ Disabilities	Modified Course Agreement (MCA)	Candidates create a modified course agreement which includes essential questions, key vocabulary, assignments and modified tests. Students must also include the use of technology.
Junior Year	READ 3350-Teaching Reading in the Content Areas	1. Directed Reading Lesson 2. Content Area Reading Strategy Demonstration 3. Midterm/Final	1. Candidates create a directed reading lesson for use in their content area. Through this task, candidates demonstrate knowledge of tapping background knowledge, developing vocabulary and concepts, monitoring comprehension throughout the reading process and evaluating overall comprehension. Within this task, candidates demonstrate effective verbal, nonverbal and media communication techniques to foster active inquiry, collaboration and supportive reading interaction/intervention in the classroom. Candidates also demonstrate an understanding and use of formal and informal assessment strategies to evaluate the continuing development of the reader. Candidates use a variety of instructional strategies to encourage critical thinking, problem solving and performance skills in students within this task. Additionally, within this lesson, candidates must provide modifications for English language learners. Proper grammar and writing techniques are also demonstrated within this task. All instruction and learning activities within the lesson must connect to both content and common core standards. 2. Candidates apply content area reading strategies presented in class by developing ideas for using the strategies in their content areas. Through this task, candidates demonstrate an understanding of how students learn and develop as readers and provide learning opportunities that support student intellectual, social and personal development. This task is delivered in oral presentation format and demonstrates proper speaking techniques. 3. Candidates reflect and respond formally to prompts that require them to provide research-based evidence in support of an argument/position. They are also required to demonstrate proper writing techniques and skills, as well as format styles. Prompts used in this assessment require students to read and disseminate information from multiple sources.
	SEED 4122-Methods & Materials of Teaching Math	Math Letter Writing; Classroom Management Plan; Questioning Project	**Mathematical Letter Writing**: To better prepare you for teaching mathematics in grades 7–12, you will complete a 10-week mathematical writing project in which you are paired with a high school student. You will exchange weekly "math letters" (per guidelines described in class) with the student and provide him/her with quality feedback. Content should span a range of course topics aligned to CCSSM. **Classroom Management Plan:** To prepare you for managing all aspects of the classroom environment, you will use at least 4 professional sources to develop a classroom management plan that addresses each of the following: first day of class, managing the curriculum, classroom relations and student behaviors; and handling inappropriate behaviors. **Questioning Project & Lesson Plan**: Once during the semester you will be videotaped teaching a lesson. You will then be expected to watch your video and perform an analysis of your questioning techniques (specifically identifying question types) and write a reflection.
Senior Year	CUED 4700-Educational Data & Assessment	1. Graphic/Narrative summary of student work samples 2. TTU Lesson plan/Formative Assessment and TTU Lesson plan/Summative Assessment	1. Demonstrate an understanding of analyzing student learning by gathering student work samples and providing meaningful feedback. 2. Demonstrate an understanding of planning assessments with clear measurement criteria and aligned with content standards as well as creating effective questions that correlate to instructional goals.
	SEED 4871-Residency I	TEAM (Teacher Educator Acceleration Model)	Teacher Candidates are evaluated once based on the TEAM rubric during SEED 4871-Residency I
	SEED 4872-Professional Seminar I	Assessment Project	Students observe a class with their assigned mentor teacher. They will address reflective prompts regarding the assessment that happens during the lesson, and they will collect/choose appropriate student work samples to give feedback on student learning.
		Lesson Plan	Students create a lesson plan that addresses required indicators on the TEAM Rubric. This activity is completed in pairs.
		Mock Interview	Students create a resume and particpate in a mock interview. This assignment assesses the professionalism of the candidate.
		Journal Article Assignment	Students choose a peer-reviewed journal article that relates to an assigned topic. Students then prepare a presentation that highlights at least one teaching strategy as they address the topic. Journal articles are summarized in a formal paper.
	SEED 4881-Residency II	TEAM (Teacher Educator Acceleration Model)	Teacher Candidates are evaluated twice based on the TEAM rubric during SEED 4881-Residency II
	SEED 4882-Professional Seminar II	edTPA (Teacher Performance Assessment)	Teacher Candidates compile a portfolio of lesson plans, artifacts, and videos, which highlight their teaching practices. The portfolios are submitted to Pearson for national scoring.

Tennessee Middle Grades Reading Standards TTU Middle School Math Crosswalk Selected Coursework	Content Knowledge & Content Related Pedagogy				Student Development				Curriculum			Learning Expectations-Instruction				Assessment Strategies		Reflective Practice		Community Context		
6-8 Math Curriculum		**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**1**	**2**	**3**	**4**	**1**	**2**	**1**	**2**	**1**	**2**	**3**
FOED 2011-Intro to Teaching & Technology	X	X			X	X			X	X		X	X	X	X	X	X	X	X	X	X	X
FOED 1820-Intro to Field Experience **OR**	X	X			X					X		X		X		X		X	X			
FOED 1822-Intro to Field Experience & Orientation	X	X			X					X		X		X		X		X	X			
EDPY 2200-Educational Psychology					X	X	X	X								X	X	X	X	X	X	X
FOED 3010-Integrating Instr. Technology into the Classroom	X									X						X		X	X	X	X	X
HEC 3500-Dev Middle Childhood/Adolescence		X	X															X	X	X	X	X
ESLP 4100-ESL Methods & Materials for PK-12	X	X			X	X			X	X		X	X	X	X	X		X	X	X	X	X
FOED 3820-Field Experience in Education	X	X	X			X		X	X	X	X	X		X	X	X			X	X		X
READ 3312-Literacy II: Middle School Reading Program	X	X	X	X	X	X	X	X	X	X	X			X	X	X		X			X	
READ 3350-Teaching Reading in the Content Areas	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X	X		X
SEED 4122-Methods & Materials of Teaching Math		X							X	X								X	X	X	X	X
SEED 4422-Teaching Math w/Technology																		X	X			X
SEED 4322-Teaching Algebra in Middle/HS										X								X	X	X		X
SPED 3000- Teach Persons w/ Disabilities										X		X	X	X		X	X		X	X	X	
CUED 4700-Educational Data & Assessment	X				X			X	X			X		X		X	X	X	X			
SEED 4871-Residency I	X	X			X			X	X			X	X	X	X	X	X	X	X	X	X	X
SEED 4872-Professional Seminar I								X		X				X		X		X				X
SEED 4881-Residency II	X	X			X			X	X			X	X	X	X	X	X	X	X	X	X	X
SEED 4882-Professional Seminar II	X	X			X				X			X	X	X	X	X	X	X	X			

Middle Grades 6th Grade Math Content Standards TTU Middle School Math Crosswalk	Understand Ratio Concepts & Use Ratio Reasoning			Apply & Extend	Compute Fluently & Find Common Factors			Apply & Extend Previous Understanding of Numbers				Apply & Extend Previous Understanding of Arithmitic to Algebraic Expressions				Reason About & Solve One-Variable Equations & Equalities				Quant - DVs & Ivs	Solve Real-World & Math Problems Involving Area, Surface Area, & Volume				Develop Understanding of Statistical Variability			Summarize & Describe Distributions	
6-8 Math Curriculum	**1**	**2**	**3**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**5**
MATH 1410-Survey of Elem Math I	X	X	X	X	X	X	X	X	X	X	X	X																	
MATH 1420-Survey of Elem Math II													X	X	X		X				X	X	X	X	X	X	X	X	X
MATH 1130-College Algebra	X	X	X									X	X	X	X	X	X	X	X	X									
MATH 1530-Elementary Probability & Statistics																									X	X	X	X	X
MATH 1630-Finite Mathematics					X	X	X	X																					
MATH 1720-Pre-calculus II												X	X	X	X	X	X	X	X	X									
SEED 4122-Methods & Materials of Teaching Math																					X	X							
SEED 4422-Teaching Math w/Technology																					X								
SEED 4322-Teaching Algebra in Middle/HS												X	X	X	X	X	X	X	X	X									
FOED 3820-Field Experience in Education	Throughout the candidates' field experience courses, candidates incorporate middle school student content standards into a variety of teaching experiences, including formal unit and lesson plans based on the grade level of students in their classrooms.																												
SEED 4871-Residency I SEED 4872-Professional Seminar I SEED 4881-Residency II SEED 4882-Professional Seminar II	Throughout the candidates' residency, professional seminars, and edTPA experiences, they work intensely with the middle school math standards as they compose lessons and teach their middle school students.																												

Middle Grades 7th Grade Math Content Standards TTU Middle School Math Crosswalk	Proportional Relationships			The Number System			Expressions & Equations				Geometry						Statistics & Probability							
	Analyze Proportional Relationships & Use Them to Solve Real-World Problems			Apply & Extend Operations with Fractions to Add, Subtract, Multiply, Divide Rational #s			Properties of Operations to Equivalent Expressions		Real-life & Math Probs - Numerical & Algebraic Expressions		Draw, Construct, & Describe Geometrical Figures & Describe the Relationships			Solve Real-World & Math Problems Involving Angle Measure, Area, Surface Area, &			Use Random Sampling to Draw Inferences		Draw Informal Comparative Inferences about 2 Populations		Investigate Chance Processes and Develop, Use, & Evaluate Probability Models			
6-8 Math Curriculum	**1**	**2**	**3**	**1**	**2**	**3**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**5**	**6**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
MATH 1410-Survey of Elem Math I	X	X	X	X	X	X																		
MATH 1420-Survey of Elem Math II											X	X	X	X	X	X	X	X	X	X	X	X	X	X
MATH 1130-College Algebra							X	X	X	X														
MATH 1530-Elementary Probability & Statistics																	X	X	X	X	X	X	X	X
MATH 1630-Finite Mathematics				X	X	X	X	X	X	X														
MATH 1720-Pre-calculus II							X	X	X	X														
SEED 4122-Methods & Materials of Teaching Math											X													
SEED 4422-Teaching Math w/Technology											X			X		X								
SEED 4322-Teaching Algebra in Middle/HS							X	X	X	X														
FOED 3820-Field Experience in Education	Throughout the candidates' field experience courses, candidates incorporate middle school student content standards into a variety of teaching experiences, including formal unit and lesson plans based on the grade level of students in their classrooms.																							
SEED 4871-Residency I SEED 4872-Professional Seminar I SEED 4881-Residency II SEED 4882-Professional Seminar II	Throughout the candidates' residency, professional seminars, and edTPA experiences, they work intensely with the middle school math standards as they compose lessons and teach their middle school students.																							

Middle Grades 8th Grade Math Content Standards TTU Middle School Math Crosswalk	Know #s are Not Rational & Approximate by Rational #s		Work with Radicals & Integer Exponents				Understand Connections-Proportional Relationships, Lines, Linear Equations		Analyze/Solve Linear Equations & Pairs of Simultaneous Linear Equations		Define, Evaluate, & Compare Functions			Use Functions to Model Relationships Between Quantities		Understand Congruence & Similarity Using Physical Models, Transparencies, or Geometry Software					Understand & Apply the Pythagorean Theorem				Volume of Cylinders, Cones, Spheres	Investigate Patterns of Association in Bivariate Data			
6-8 Math Curriculum	**1**	**2**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**1**	**2**	**3**	**4**
MATH 1410-Survey of Elem Math I	X			X	X	X																						
MATH 1420-Survey of Elem Math II							X									X	X	X	X	X	X	X	X	X	X	X	X	X
HEC 3500-Dev Middle Childhood/Adolescence																												
MATH 1130-College Algebra	X	X	X	X	X	X	X		X	X	X	X	X	X	X													
MATH 1530-Elementary Probability & Statistics																									X	X	X	X
MATH 1630-Finite Mathematics					X	X			X	X	X																	
MATH 1720-Pre-calculus II							X		X	X	X	X	X	X	X													
SEED 4122-Methods & Materials of Teaching Math																		X	X									
SEED 4422-Teaching Math w/Technology							X									X	X			X	X	X	X					
SEED 4322-Teaching Algebra in Middle/HS							X	X	X	X	X	X	X	X	X													
FOED 3820-Field Experience in Education	Throughout the candidates' field experience courses, candidates incorporate middle school student content standards into a variety of teaching experiences, including formal unit and lesson plans based on the grade level of students in their classrooms.																											
SEED 4871-Residency I SEED 4872-Professional Seminar I SEED 4881-Residency II SEED 4882-Professional Seminar II	Throughout the candidates' residency, professional seminars, and edTPA experiences, they work intensely with the middle school math standards as they compose lessons and teach their middle school students.																											