Rowan University

College of Education

MA in STEM Education Residency Handbook

2018-2019
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Rowan UniversityMission Statement
A leading public institution, Rowan University combines liberal education with professional preparation from the baccalaureate through the doctorate. Rowan provides a collaborative, learning-centered environment in which highly qualified and diverse faculty, staff, and students integrate teaching, research, scholarship, creative activity and community service. Through intellectual, social and cultural contributions, the university enriches the lives of those in the campus community and surrounding region.

About Rowan University
Since its founding in 1923, Rowan University has evolved from a teacher preparation college to a bustling regional university that's ranked among the best public universities in the North by U.S. News and World Report. Today, Rowan's more than 14,000 students choose from more than 80 bachelor's and 60 master's degree programs, five doctoral programs and two professional programs. The university is one of just 56 institutions in the country with accredited programs in business, education, engineering and medicine.

Rowan University College of Education Vision Statement
The College of Education will be a leading force in preparing and supporting reflective practitioners who use education to transform our global society.

Rowan University College of Education Mission Statement
To positively impact and develop local, regional, national and global educational communities by:
- collaborating with partners in the field to promote learning and the mental and physical health of diverse learners in all settings
- integrating teaching, research, and service to advance knowledge in the field
- preparing and supporting professionals through the development of knowledge, skills and dispositions with the ultimate goal of ensuring equitable educational opportunities for all learners.

Teacher Preparation at Rowan University
The College of Education offers programs in teacher education and other human services fields. Rowan University enjoys an outstanding reputation as a teacher preparatory institution. Rowan University was awarded the first Program of Distinction in Teacher Education by the New Jersey State Department of Higher Education. The Rowan University teacher education program is large and comprehensive and has consistently earned national accreditation from the National Council for the Accreditation of Teacher Education (NCATE). In addition to teacher education, the College of Education offers baccalaureate and graduate degree program options and concentrations in other professional and human services fields. Many of these programs are in the fields that serve the changing needs of our educational society and offer broad opportunities for employment or continued study.
College of Education Administration

Monika Williams Shealey, Ph.D., Dean

Corinne Meredith-Brown, Ph.D., Associate Dean

MA in STEM Education

Issam H. Abi-El-Mona, Ph.D, Coordinator of MA in STEM Education and Academic Advisor

Office of Field Experiences

Laurie Haines, Certification Specialist
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COE Policies and Procedures
http://www.rowan.edu/colleges/education/ofe/index.html
Overview of the MA in STEM Education and Residency

The Master of Arts in STEM Education offers the unique opportunity for students who have undergraduate degrees in mathematics, engineering, or the sciences to pursue an initial New Jersey teaching certificate in mathematics and/or the sciences and a Master's degree simultaneously. This program is carefully designed such that all coursework has a STEM (Science, Technology, Engineering, Mathematics) focus that provides the ideal pedagogical preparation for prospective Biology, Chemistry, Mathematics or Physics teachers in the K-12 setting, particularly in grades 6-12.

MA in STEM Education Course Schedule

<table>
<thead>
<tr>
<th>Length and Mode of Delivery for Each Course</th>
<th>Summer 2018</th>
<th>Fall 2018</th>
<th>Spring 2019</th>
<th>Summer 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM 60501: STEM Teaching &amp; Research Methods I (1 SH) [Pre-req: Matriculation in the MA in the STEM Education]</td>
<td>STEM 60512: STEM Education Residency I (1 SH) [Pre-req: B- or higher in STEM 60501, READ 30520, STEM 60510] Offered face-to-face across 15 weeks beginning and ending with the standard start and end dates for the term</td>
<td>STEM 60503: STEM Teaching &amp; Research Methods III: Math (6 SH) [Pre-req: B- or higher in STEM 60502, STEM 60512, STEM 60522, SELN 60576] Offered face-to-face across 15 weeks beginning and ending with the standard start and end dates for the term</td>
<td>STEM 60504: Professional Seminar for STEM Educators (1 SH) [Pre-req: B- or higher in STEM 60513] 60501</td>
<td>60503</td>
</tr>
<tr>
<td>READ 30520: Content Area Literacy (1 SH) [No Pre-req] Offered as a HYBRID course across 8 weeks.</td>
<td>STEM 60502: STEM Teaching &amp; Research Methods II: Math (5 SH) STEM 60522: STEM Teaching &amp; Research Methods II: Science (5 SH) [Pre-req: B- or higher in STEM 60501, READ 30520, STEM 60510] Offered face-to-face across 15 weeks beginning and ending with the standard start and end dates for the term</td>
<td>STEM 60513: STEM Education Residency II (3 SH) [Pre-req: B- or higher in STEM 60502] 60512, SELN 60576</td>
<td>Offered face-to-face across 18 weeks beginning with the standard start date and ending by June 30th.</td>
<td>Note: STEM 60504 is for students in their final semester</td>
</tr>
<tr>
<td>STEM 60510: Teaching STEM in Diverse Settings (3 SH) [Pre-req: Matriculation in the MA in STEM Education program] Offered as a HYBRID course across 8 weeks.</td>
<td>SELN 60576: Inclusive Instruction in STEM Classrooms (3 SH) [Pre-req: B- or higher in STEM 60501, READ 30520, STEM 60510] Offered 100% ONLINE across 8 weeks beginning October and ending December.</td>
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<tr>
<td>SMED 60550 - Schools &amp; Society: Foundations for Secondary Teaching (1 SH) [No Pre-req] Offered face-to-face: Meeting dates TBA</td>
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Program Course Descriptions

STEM 60501: STEM: Teaching & Research Methods I 3 s.h.
Prerequisites: Matriculation in MA in Stem Education (G845)
Corequisites: Teaching STEM in Diverse Settings (STEM 60510) and READ 30520: Content Area Literacy
This is the first course in the 3-course STEM methods sequence for candidates in the Master of Arts in STEM Education program. Through integrated STEM coursework, candidates will focus on learning how to make content explicit; eliciting and interpret students’ thinking; engage in strategic relationship-building conversations with students; analyze instruction for the purpose of improving it; and communicate with other professionals.

STEM 60510: Teaching STEM in Diverse Settings 3 s.h.
Prerequisites: Matriculation in the MA in STEM Education
Corequisites: STEM 60501, READ 30520
This course will enable STEM Education candidates to gain a multifaceted understanding of the individual and institutional elements that impact student achievement in STEM. Candidates will investigate the role that gender, SES, race, ethnicity, home language, religion, and other identity-based aspects shape school experiences, learning, and achievement in STEM. Candidates will then learn about specific approaches and instructional practices that they can use in the classroom to promote learning for nonmainstream students, including teaching academic language, differentiating instruction and assessments, and supporting home, community and school partnerships.

READ 30520: Content Area Literacy 3 s.h.
This course is designed for reading and non-reading majors interested in increasing knowledge and skills in teaching reading in the content areas. It is a required course for those seeking an M.A. in reading. Instruction is provided in the developmental aspects of reading with little emphasis on corrective or remedial practices. The content of the course may be oriented toward the subject matter areas represented by the students enrolled in the course. Special emphasis is also given to developing vocabulary, comprehension, and study skills as well as to assessing pupil ability to read content material and to select suitable materials for instruction.

SMED 60550 – Schools & Society: Foundations for Secondary Teaching 3 s.h.
This introductory course addresses a number of foundational questions in the field of education, including: Who goes to school and for what purposes? What is taught and who decides? How are schools organized and who funds them? How are schools different now than they were 100 years ago? What legal precedents and reform movements have shaped education today? How are schools in the United States similar to and different from those abroad? In addition to reading and discussing works by seminal scholars in the field of education, students will also be required to engage in a field-based service-learning project in order to build a bridge between theory and practice. Students are expected to spend 3 hours/week in the field engaged in their project. Placements will be facilitated by the Office of Field Experiences.

STEM 60502: STEM: Teaching & Research Methods II: Math 5 s.h.
Prerequisites: B- or higher in: STEM 60501, STEM 60510, and READ 30520
This is the second course in the 3-course STEM methods sequence for candidates in the Master of Arts in STEM Education program. Through integrated STEM coursework, candidates will learn high-leverage instructional and assessment strategies used in STEM classrooms with a focus in Math.

STEM 60522: STEM: Teaching & Research Methods II: Science 5 s.h.
Prerequisites: B- or higher in: STEM 60501, STEM 60510, and READ 30520
This is the second course in the 3-course STEM methods sequence for candidates in the Master of Arts in STEM Education program. Through integrated STEM coursework, candidates will learn high-leverage instructional and assessment strategies used in STEM classrooms with a focus in Science.

STEM 60512: STEM: Education Residency I 1 s.h.
Prerequisites: B- or higher in: STEM 60501, STEM 60510; and READ 30520
This course serves as the first semester of the yearlong teacher residency required for candidates in the MA in STEM Education. Each resident is placed in a middle or high school and attends that placement 4 full days per week during the Fall semester. Using both Rowan and placement school district measures of teaching effectiveness, supervisors will evaluate residents on requires demonstrated mastery of subject area content, lesson planning, and multiple instructional strategies to meet varied student needs and demonstrated ability to assess learner progress and modify instruction accordingly, manage all aspects of classroom activity, and work collaboratively with all instructional, administrative, parental, and community members of the classroom and school community.
SELN 60576: Inclusive Instruction in STEM Classrooms 3 s.h.
Prerequisites: B- or higher in: STEM 60501, READ 30520, STEM 60510
Corequisites: STEM 60502 and STEM 60512
With a focus on STEM education for students with special needs, this course is designed to begin developing the knowledge, skills, and dispositions necessary for STEM teachers to understand and education students in inclusive classrooms. Emphasis will be on: (a) understanding the legal foundations for inclusive instruction, (b) recognizing students’ diverse strengths and needs, (c) designing, implementing, and assessing effectively differentiated lessons that feature research-based strategies, and (d) organizing and managing a flexible, student-centered classroom.

STEM 60503: STEM: Teaching & Research Methods III: Math 6 s.h.
Prerequisites: B- or higher in STEM 60502, STEM 60512, SELN 60576
With a focus on content area Math Assessment, Analysis of Student Learning, and Teacher Research, the objectives for the course will be STEM-focused and based on the High Leverage Practices identified and studied by education faculty at the University of Michigan (http://teachingworks.org/work-of-teaching/high-leverage-practices). Upon completion of the course, prospective STEM teachers will demonstrate the ability to:

- Set long and short-term learning goals for students referenced to external benchmarks
- Appraise, choose, and modify tasks and texts for a specific learning goal
- Design a sequence of lessons toward a specific learning goal
- Select and use particular methods to check understanding and monitor student learning
- Compose, select, interpret, and use information from methods of summative assessment
- Analyze instruction for the purpose of improving it
- Communicate with other professionals

STEM 60523: STEM: Teaching & Research Methods III: Science 6 s.h.
Prerequisites: B- or higher in STEM 60522, STEM 60512, SELN 60576
With a focus on content area Science Assessment, Analysis of Student Learning, and Teacher Research, the objectives for the course will be STEM-focused and based on the High Leverage Practices identified and studied by education faculty at the University of Michigan (http://teachingworks.org/work-of-teaching/high-leverage-practices). Upon completion of the course, prospective STEM teachers will demonstrate the ability to:

- Set long and short-term learning goals for students referenced to external benchmarks
- Appraise, choose, and modify tasks and texts for a specific learning goal
- Design a sequence of lessons toward a specific learning goal
- Select and use particular methods to check understanding and monitor student learning
- Compose, select, interpret, and use information from methods of summative assessment
- Analyze instruction for the purpose of improving it
- Communicate with other professionals

STEM 60513: STEM: Education Residency II 3 s.h.
Prerequisites: B- or higher in: STEM 60502, STEM 60522, STEM 60512 and SELN 60576
This is the second of the two field experiences required for candidates in the MA in STEM Education. Continuing in their field placement from STEM Education Residency I, candidates will attend their field placements 4 full days per week during the Spring semester. Using both Rowan and placement school district measures of teaching effectiveness, supervisors will evaluate residents on requires demonstrated mastery of subject area content, lesson planning, and multiple instructional strategies to meet varied student needs and demonstrated ability to assess learner progress and modify instruction accordingly, manage all aspects of classroom activity, and work collaboratively with all instructional, administrative, parental, and community members of the classroom and school community. The course will run from January through June to enable candidates to engage in all end-of-year activities at their residency sites.

STEM 60504: Professional Seminar for STEM Educators 3 s.h.
Prerequisites: B- or higher in STEM 60513 and STEM 60503 or STEM 60523
This is the capstone course in the MA in STEM Education and will prepare candidates for their teaching positions by focusing on issues critical to new teachers. The course is designed to support candidates in their final transition from teacher candidate to teacher. Topics include understanding school climate, developing a professional development plan, developing a plan for communicating with families, planning for the first six weeks (or unit) of school, and preparing for a substitute teacher.
Overview of the Residency

Residency – 10 months

- One school year (September–June), following district calendar (including pre-planning, holidays, winter break, spring break, professional days, and end-of-year closing)
- Monday-Thursday – TRs intern at school during normal school contract hours and as needed for planning, tutoring and other after-school activities, meetings, parent conferences, and open houses
- Fridays – TRs attend classes during Rowan’s Fall and Spring semesters (Note: During Rowan’s winter-session, TRs report to their field placements on Fridays.)

Completed residency will require all of the following:

- Successful completion of 10-month residency
- Demonstrated competency in the skills, knowledge and dispositions required for teachers (as documented through observations and evaluations)
- Successful final evaluations, culminating in the University’s recommendation for teacher certification (Certificate of Eligibility with Advanced Standing)
- Adherence to attendance and all other policies

Teacher Residency Attendance Policy

The TR has an obligation to be consistent and punctual in attendance for all school-related activities.

- The TR should arrive at the time designated by the CT and Principal. She/he should remain at the school for the time duration as specified by the University Supervisor. Minimally, the program suggests that residents arrive approximately 15 minutes before the first bell and stay 15 minutes after the last bell if no other required school-based activities are scheduled.
- The TR is expected to be present for all assigned days in the schools. Absences related to illness or death in the immediate family will be excused with documentation. If a TR must miss days due to reasons cited, all work must be made up. The CT and University Supervisor will determine how the TR can make up the work. TRs may also be required to attend mandatory professional development training as designated by the University.
- The TR must attend all school-based meetings and professional development sessions.
- If TRs are absent more than 6 times during the yearlong residency, they may be removed from the placement. This includes days for job interviews. Partial absences will count as one absence.
The Collaborative Teaching Model: Stages of the Residency

The MA in STEM Education is framed around three stages designed to serve as a model of the collaborative relationship between the TR and the CT. While the length and structure of each stage will vary, all are important to the success of the residency. The duration of each stage is dependent upon a satisfactory evaluation by the Supervisor (with continuous input from the CT).

I. Early Observation [September]
   - The TR is introduced to the class as a co-teacher, not a student teacher.**
   - The TR establishes relationships with the students, becoming familiar with student needs, interests, and profiles.
   - The TR observes and assists the CT in modeling effective lessons, including differentiated instruction.
   - The TR observes and assists in classroom management procedures.
   - The CT leads pre- and post-lesson conferences with the TR to evaluate, reflect, answer questions and plan for future lessons.
   - The TR observes methods in which the CT collects and records student data to implement data-informed decision-making.
   - The CT introduces the TR to the school culture and the resources available to support academic achievement of diverse learners.
   **The CT begins to establish the TR as the co-teacher from the beginning of the residency.

   The CT conducts informal and formal (written – using the Classroom Observation Process forms) observations along with the Supervisor, conducts formal observations of the TR and provides feedback, according to the University’s established timelines.

II. Collaborative Teaching [October-January]
   - The TR begins to use relationships with students and understanding of student profiles to facilitate all classroom activities.
   - The TR and the CT will work together as a team, co-planning and co-teaching effective lesson, including differentiated instruction. (The TR and the CT may vary the lead teacher role giving both CT and TR opportunities to demonstrate effective teaching practices.)
   - The TR begins to implement and practice consistency in classroom management procedures.
   - CT and TR co-facilitate pre- and post-lesson conferences to evaluate, reflect, answer questions and plan for future lessons.
   - The TR and the CT jointly collect and record student data to implement data-informed decision-making.
   - The TR begins to utilize the school culture and the resources available to support academic achievement of diverse learners.

   The CT, along with the Supervisor, conducts formal observations of the TR and provides feedback, according to the University’s established timelines.

III. TR as Lead Teacher: Full Responsibility for Teaching ONE Class in the Collaborative Model [Second semester]
   - The TR builds on established relationships with the students and understanding of student profiles to facilitate all classroom activities – FOR ONE CLASS. If the Supervisor and CT agree that the TR is ready to take on additional classes, then the TR will assume new duties.
   - The TR plans and teaches effective teaching practices, including differentiated instruction.
   - The TR maintains consistent classroom management procedures.
   - The TR leads post-lesson conferences to evaluate, reflect, answer questions and plan for future lessons.
   - The TR collects and records student data to implement data-informed decision-making.
   - The TR utilizes the school culture and the resources available to support academic achievement of diverse learners.

   **The CT may provide support as needed in all of the above steps.

Addressing Concerns
   - If progress is not satisfactory, the CT should discuss the specifics of the concern with the TR and the Supervisor as soon as the situation becomes apparent; document all discussions.
   - The CT and TR should work together to develop strategies to overcome the problem.
   - In consultation with the TR and the University Supervisor, decide upon a course of action.
   - Invite the assistance of the MA STEM Program Coordinator, if CT or supervisor feels it would be helpful and/or necessary.
Roles and Responsibilities for Teacher Residents

Teacher residents (TRs) in the MA in STEM Education program are designated placements through the Office of Field Experience. Coursework begins in June and continues, along with the residency, in September, concluding in June of the following year. The TRs complete university coursework and a yearlong residency to fulfill requirements for the MA in STEM Education program, and NJ licensure requirements for a teaching certificate in K-12 Biology, Chemistry, Mathematics, or Physics.

Requirements Prior to Beginning Residency

• **Benchmarks including GPA and Passing Praxis Core and Praxis II Exams**

• **Mantoux TB Test**
  o Students who are in a school setting 20 or more hours per month must have a valid Mantoux test. A Mantoux test would be invalid if you have been out of a school setting over six (6) months. A copy of your Mantoux test should be taken with you to any school in which you are placed. A copy of your current Mantoux test must be filed with the student health center.
  o The Wellness Center (Student Health Center) located in Linden Hall (256-4333) offers the Mantoux Test on Monday thru Friday 9 a.m. to 5 p.m. There is a $10.00 fee. You must return within 48-72 hours to have the results noted by a nurse. If you do not return, your test will not be valid because the time for interpretation cannot be more than 72 hours. You will then have to repeat the test with an additional cost of $10.00.
  o If you choose not to use the Wellness Center, you may have the Mantoux Test done at your own doctor's office.
  o Students are responsible for keeping their Mantoux test results up to date. Upon the request of the school, students must provide a copy of a valid Mantoux test to the school to which they are assigned for any and all field placements.

• **Criminal History Background**
  o Many school districts are asking for candidates to be fingerprinted and have a criminal background check or hold a substitute teacher certification in order to be placed for any field experience. Any individual applying for a position in a public or private school in New Jersey will be required to undergo a criminal background check.
  o If a student is placed in a district that requires a criminal background check prior to the start of a field experience, the student will be notified of the procedure to follow.
  o Once notified, it becomes the student’s responsibility to comply with the requirement within identified timeframes. **Failure to do so may result in a denial of placement and removal from the corresponding courses.**

• **Attend and participate in District-Level New Teacher Orientation sessions**

• **Attend and participate in all District Pre-planning sessions**

• **Gather and study school, district, and teacher information:**
  o School/District handbooks/policies regarding
    ❁ Student discipline policies/procedures with copies of forms, letters, etc. and your guidelines for sending students to the principal and how these responsibilities will be shared, transferred, and returned to the teacher
    ❁ Health and safety information and procedures for fire drill, lock down drills, evacuation, security, health emergency, medications, child abuse/neglect, and first aid
    ❁ Procedures/policies for communication with parents/administration/others and sample forms
    ❁ Assessment procedures, sample report cards and progress reports
    ❁ Allowable student contact/communication policies
  o Map of the school and location/room numbers of: restrooms, media center, computer labs, teacher workrooms, classrooms, and specialty instruction areas
  o Textbooks with teacher editions and curriculum guides w/NJ Core Curriculum Content Standards
  o School, teaching, lunch and duty schedules
  o Faculty and staff roster listing names, email addresses and position
  o Class lists (including student IEPs, 504s, special needs, health issues, etc.)
  o Extracurricular opportunities
  o Professional development opportunities
  o Secure access to online gradebooks used in the school, if possible
Requirements throughout Residency

- Enact moves that support the primary goal of the placement: P-12 student achievement.
- Be on time as directed by the expectations of the school, CT, and supervisor.
- Videorecord lessons daily once the first lesson has been taught.
- Dress professionally/appropriately for the setting.
- Fulfill written, video-recorded, and meeting obligations for CT, supervisor, and university as assigned.
- Daily, observe the collaborating teacher and/or other teachers using the Observation Process Form (If your supervisor does not assign an area of focus, you are to choose one area of focus for each observation.)
- Meet with collaborating teacher and supervisor for pre/post observation conferences.
- Participate in non-teaching school assignments, meetings, and/or other professional development and involvement.
- Follow the Collaborative Teaching Model: Stages of the Residency (p.8 of this document).

Spring Semester Requirements

- During the school’s spring semester, each TR must have one class for the duration of the second half of the year for which he or she takes lead responsibility for planning, teaching, and assessing, with the CT serving primarily as resource and support. This is different from traditional student teaching in which the student teacher “takes over” a whole schedule for most of the semester. Fellows are to focus acutely on one class and continue to learn about planning and assessment (and teacher moves) by serving as co-planner/co-assessor/co-teacher with their CT in the other classes.
- For a minimum 2-week span during the Spring Semester, the TR will assume primary responsibility (lead planning, assessment, and instruction) for ALL of the classes in the CT’s schedule.
- TRs must ready plan all edTPA requirements and finalize such requirements by the end of the term.

All performance assessments will be submitted electronically by university supervisors and collaborating teachers via Tk20. In addition, teacher residents will complete a capstone project through edTPA.

Substitute Teaching

- TRs may not substitute teach in the district in which they are placed during any field placements. This includes the entire year of the placement.
- TRs may not miss school for any paying jobs, including substituting.
Roles and Responsibilities for Collaborating Teachers

Each TR works closely with a Collaborating Teacher (CT) based on agreement between school, school district and the Rowan University College of Education Office of Field Experience for the full year of the residency.

Collaborating Teacher

Designated Collaborating Teachers (CTs) are experienced teachers dedicated to mastering their craft, promoting excellence in the teaching profession, and mentoring novice teachers. CTs receive a yearly stipend for their role as a skilled colleague. CTs support TRs by providing supportive environments in which Teacher Residents develop the habits and skills of excellent teachers. Rowan University Collaborating Teachers provide this support by:

- **Co-teaching** with the TR from September to June of the placement school academic calendar Monday through Thursday and continuing the flow of the classes on Fridays when the TR is completing coursework at Rowan;
- **Mentoring** the TR in school-based culture, policies, and protocols;
- **Opening their classroom** to frequent visits by University professors and TR supervisor;
- Informally and formally **evaluating** the TR in collaboration with his or her supervisor;
- **Including project-developed integrated STEM activities** in his or her classroom;
- **Attending scheduled MA STEM program orientation/conferences and any forwarded professional development activities.**

Collaborating Teacher Qualifications

District faculty assigned to supervise teacher candidates shall (per NJAC 6A:9-10.3):

- Be approved by the principal and district office with input from Rowan;
- Have a minimum of three years of successful teaching experience, including one with the district;
- Possess a standard instructional certificate in the appropriate content area;
- Have appropriate certification that coincides with the area of instruction for which the candidate is being prepared; and
- Be a full-time district faculty member with demonstrated expertise in the field of mentoring/supervision. It is preferred but not an obligation that the CT holds a minimum of a Masters Degree.

Checklist in Preparation for the Initial Meeting with the Teacher Resident [June 2nd, 4:00-5:00]

- Develop an agenda for your first meeting
  - Contact information
  - Goals, Expectations, Responsibilities (setting mutually agreed upon norms)
  - Feedback strategies and meeting times
  - District policies regarding allowable contact with students (DOs and DONTs)
- Prepare materials that the teacher resident will need to perform his/her responsibilities
- Plan to assist in setting up observations with other teachers/administrators in your school
- Ask the Teacher Resident to provide a profile of his/her experiences
  - Previous teaching and field experiences (district, school, grade level, subject)
  - Courses taken in a particular area (e.g., child development, reading)
  - Strengths and skills that will help students learn
  - Residents expectations
  - Previous work experience, hobbies and interests
- Organize your classroom so that the teacher resident has a work place similar to yours in location and area
- Share pertinent student information such as IEPs, 504s or other special needs
- Prepare the school community and your students for the arrival of the teacher resident
Focused Mentoring Themed Questions

The following themed questions are for guiding teacher residents in their approach to best practices in teaching during their full residency year.

**August/September**

**Theme 1: Beginning-of-the-Year Structures/Effective Classroom Environments**
- What record-keeping procedures must be in place?
- Is there a way to manage my time more effectively?

**Theme 2: School-Based Resources—Personnel and Non-Personnel Resources**
- Who is available to support teaching and psychosocial development in the school and the community?
- What programs—school-based and community-based—are available to students?
- What facilities/materials are available?

**Theme 3: Creating a Class Profile**
- What instructional data/information do I have for the students in my classroom?
- What key assessments can I use to determine instructional baselines?
- What instructional groupings will I create to support instruction?
- Are there students with IEPs, ELLs, or other special populations?

**October/November**

**Theme 1: Revisiting Effective Classroom Environments**
- Does my classroom reflect and promote student learning?
- How am I managing instructional time? Is my pacing effective?
- Are students respectful of me and of their classmates?
- Do students have the opportunity to take responsibility for themselves and for other students?
- Am I reinforcing positive behavior?

**Theme 2: Lesson Planning**
- What learning objectives have I identified and with which standards have I aligned my lesson?
- How have I differentiated my lesson to meet the needs of all my learners?
- What will I use as evidence of student learning?
- What components and sequencing will my lesson entail?
- How will I conclude the lesson?

**Theme 3: Working with Families**
- What communication will I have with families? Phone, letters, email, texts, blogs, etc.
- What communication method will I use to start the school year?
- How will I maintain regular communication?
- How will I structure instructional conferences with families?
December/January

Theme 1: Understanding and Organizing Subject Matter—Taking the Long View of the Curriculum

- What units will be covered during the next three months?
- What key skills must be incorporated into learning experiences?

Theme 2: Engaging Students in Learning

- What strategies am I using to engage all learners?
- Am I cognizant of and accounting for the needs of all of my students?

February/March/April

Theme: Assessing Student Learning

- What assessment strategies are in place for my students? Are these assessment strategies varied?
- Do I utilize both formative and summative information to guide my instructional plans?

May/June

Theme: Assessing My Effectiveness as a Teacher

- What standards guide my practice?
- Using those standards of practice, how would I characterize my teaching practice? Which are my areas of strength?
- Which are areas needing improvement?
- What evidence do I have for the assessment I have made?
Roles and Responsibilities of Supervisors

The University assigns a Supervisor to observe, evaluate, and coach the TRs. The Supervisor works very closely with the collaborating teacher, sharing observations, input, and responsibility for the TR’s growth.

Supervisor Qualifications

- Must have taught for at least three years in a public school setting in the same content area as the teacher resident.
- Must have earned a valid teaching certificate in the same content area as the teacher resident. It is understood that the supervisor might be a retired teacher whose certification was issued from another state or has expired.
- Must be available to visit eight times during a semester and be available to resident, collaborating teacher, and university in case of emergency.
- Must be trained in the Danielson Framework for Teaching.
- Must understand the requirements needed for edTPA

Meetings, Observations, and Evaluations

During Rowan’s Fall semester, the Supervisor:

- checks in weekly with the TR and CT
- completes 3-4 informal (written but not posted in Tk20) observations and
- completes 1 Clinical Practice/Internship Midterm and Final Evaluation with SPA Addendum (Math or Science). This document will serve as the Benchmark for the TR’s work in the Spring. This will be submitted through Tk20.

During Rowan’s Winter session:

- The TR works exclusively with the CT in the classroom and creates a Professional Development Plan (if needed) in response to the baseline Clinical Practice/Internship Midterm and Final Evaluation with SPA Addendum.
- The Supervisor does not reassume responsibilities until Rowan’s Spring semester begins.

During Rowan’s Spring semester, the Supervisor:

- checks in weekly with the TR and CT
- completes 5-8 formal observations (including pre- and post- conferences) in Tk20
- completes 1 Clinical Practice/Internship Midterm Evaluation with SPA Addendum (Math or Science) in Tk20
- completes 1 Clinical Practice/Internship Final Evaluation with SPA Addendum (Math or Science) in Tk20
- By May 20th:
  - approves (informally via an email to the TR and Program Coordinator) recommendation for certification OR
  - agrees to complete 1-2 additional observations (up to the placement’s last day of school) if the TR has not yet met field requirements for certification

From the end of Rowan’s Spring Semester through the placement’s last day of school, the Supervisor:

- checks in weekly to ensure that a candidate who has successfully completed certification requirements has continued to fulfill all responsibilities OR
- completes 1-2 additional observations as needed.

Throughout the residency, Supervisors and CTs will meet on a regular basis to discuss progress and needs of the TR and plan and provide supports and activities to meet those needs.
**Suggestions for Pre-Observation Conference: via Skype, FaceTime, phone conference, etc.**

- Review plans for the lesson
- Discuss
  - Objectives and how they relate to students
  - Relationship to previous lessons or connection with resident’s prior experiences
  - Activities students will complete during the lesson
  - Students’ behavioral expectations
  - Assessment of student learning
- Prepare resident to accommodate individual differences
- Determine student follow-up after lesson
- Point out concerns about the lesson
- Establish a particular focus during the observation

**Suggestions for Post-Observation Conference – Should include the CT when at all possible**

- What was/were your learning goal(s) for today’s lesson?
- Did all of your students meet or exceed the goal? How do you know? (What evidence do you have?)
- What supported the students who met the goal?
- What supported the students who exceeded the goal?
- What got in the way for students who did not meet the goal?
- What will you do tomorrow (or very soon) to help these students meet the goal and others extend their understanding? Why?
- If you were to teach this lesson again, what would you repeat; what would you change? Why?
- What have you learned about teaching from this lesson?
- What have you learned about your students from this lesson?
- What have you learned about yourself from this lesson?
- Is there anything in particular you would like to focus on the next time I observe?

Classroom Observation Process

This process has been adapted from the Woodrow Wilson Foundation observation process and is based on Danielson framework indicators for best teaching practices. Classroom observations conducted should focus on a small number of key aspects of good teaching. Given the amount of time available for an observation and the need to avoid unnecessary distraction in the K12 classroom, the observation process can be based on five items.

A. Observing Teaching Residents in the Classroom: Core Components of Teaching

1. Student engagement and rigor of tasks students engage in during the lesson

*Student engagement:* the teacher involved all students in the lesson.
This item assesses the degree to which the teacher works to ensure that all students are actively involved in the lesson. Evidence includes actions such as encouraging students who are not volunteering to participate, or walking around the room and verbally engaging students as the teacher monitors progress of the class.

*Student engagement:* majority of students on task throughout the class.
Assesses the amount of time students in the class are engaged in or working on a specific task or activity. On-task behavior can include asking questions, being engaged in discussion, providing answers, turning in assigned class work in a timely manner, and assisting other students. Off-task behavior involves such things as students engaging in off-topic conversations, writing notes/text messages, putting their head on the table, or doing work for another class.

*Rigor of tasks:* intellectual rigor and challenging ideas keep students engaged.
This indicates degree to which the teacher goes beyond simply relaying information to supporting the deeper exploration of the subject matter. This can be seen in the quality of instructional tasks in which students are expected to engage and through individual conversations between the teacher and the students, by student questions to the instructor, or through the teacher’s answers to student questions.

Observers should note the extent to which the teacher’s instructional strategies are effective in encouraging students to explore and be engaged in relevant mathematics or science concepts. Intellectual engagement can be seen through conversations students have with one another or with the teacher in small-group settings, or by the questions, contributions, and responses the students give in whole-class settings.

2. Assessment & Evidence of student learning during the lesson

*Evidence of learning:* assessing whether students are learning during this lesson.
This indicator captures evidence that students in the class are learning the content taught during the class. Specifically, students are able to explain/discuss what they are working on and why. *Observers should make judgments about this indicator by focusing on K12 students and not on the teacher.* In addition, observers should be wary if whether or not the teacher resident initiates students’ prior concepts through engagement and uses these as a means to develop the lesson.

Evidence of learning includes students expressing their knowledge and understanding of the topic through academic writing and/or explanations that employ academic language; demonstrating how well they understand lesson content and their progress toward learning goals through their work as well as through responses to teacher questions, discussion in small groups, and other participation in the class that includes evidence for learning. Students self-assess whether they have achieved the lesson objective and provide feedback to the teacher, or that they monitor their own progress, identify their own errors and seek additional opportunities for practice.

*Informal assessment:* formative assessment to monitor the progress of all students.
These strategies might include formal assessments like quizzes, tests, or papers, as well as informal assessments through discussions with the class, with groups of students, and with individual students as well as teacher observations. Teacher activities might include walking around to look at the work of individual students or groups, or using questions to gauge student understanding.

Classroom observers looking for the effectiveness of these teacher strategies for monitoring student progress should also focus on how the teacher uses the information to inform his or her instruction. One consideration is how frequently the teacher used different ways to check for student understanding.
3. Differentiated instruction: quality learning opportunities for every student.
This aspect of instruction calls for teachers to respond to a learner’s needs in order to maximize student growth and individual success through ongoing assessment and adjustment of instruction. Relevant strategies might include flexible grouping (and regrouping) of students, ensuring that all learners in the class have tasks that are equally interesting and equally engaging, so that each child feels challenged to understand, apply, and move on to the next learning stage. Effective differentiation includes providing authentic learning opportunities in the full range of intelligence or talent areas found in the class.

4. Classroom management: teacher strategies to enhance the classroom environment.
This indicator assesses the quality of the teacher’s classroom management strategies, again based on the engagement of students in learning and how they participate in the lesson so that the teacher’s management contributes to the students’ learning. This includes setting clear behavioral expectations for students and making sure these expectations are met. Effective classroom management should be gauged by observing the students to see whether all students demonstrate a clear understanding of behavioral expectations and/or directions through their actions, and whether students execute transitions, routines and procedures in an orderly manner. In cases of inappropriate behavior that may occur during the course of the lesson, the observer should record the extent to which the teacher consistently and effectively deals with off-task and inappropriate behavior, adopts successful time management strategies, and utilizes behavioral modification strategies when needed.

5. Structures and routines to support learning: promoting understanding of important math or science concepts.
Classroom routines can positively affect students’ academic performance as well as their behavior. Through these structures and routines, students have more opportunity to learn and teachers can devote more time to instruction. Routines also help to create smoother transitions between activities and allow fewer opportunities for disruptions or for the unproductive use of instructional time. Administrative routines might be things like storing coats or books, using the restroom, sharpening pencils, or making announcements. Instructional routines include getting every student’s attention, involving them in learning tasks, ensuring appropriate behavior during instructional time, and perhaps having a process for handing in or returning student work. Other routines include knowing how to participate in discussions, asking questions, behaving as expected in groups, and following rules for getting the teacher’s attention.

6. Teacher subject matter knowledge: promoting student learning by knowing the subject and how to teach it.
This item addresses how well the lesson structure allows students to make sense of important concepts, going beyond efforts to “cover” the intended content area, to promote deep conceptual understanding of the key ideas in the content area. Observers can look for evidence through the quality of questioning strategies, including those that demonstrate the teacher’s knowledge of how students learn and understand the content area, the teacher’s understanding of student mistakes and misconceptions, skillful facilitation of group discussions, and clear explanations of concepts.

B. Rowan University Classroom Teaching Observation Items
The observation items are embedded in an observation form that allows classroom observers to make notes and draw conclusions about the quality of teaching in each area. At Rowan, we will use the ratings from the Danielson 2013 Framework for Teaching. A general guide for rating TR performance is included in the table below.

<table>
<thead>
<tr>
<th>Distinguished</th>
<th>Proficient</th>
<th>Basic</th>
<th>Unsatisfactory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers performing at the Distinguished level are master teachers and make a contribution to the field, both in and outside their school. Their classrooms operate at a qualitatively different level from those of other teachers. Such classrooms consist of a community of learners, with students highly motivated and engaged and assuming considerable responsibility for their own learning.</td>
<td>Teachers performing at the Proficient level clearly understand the concepts underlying the component and implements it well. Most experienced, capable teachers will regard themselves and be regarded by others as performing at this level. Teachers performing at the Proficient level have mastered the work of teaching while working to improve their practice.</td>
<td>Teachers performing at the Basic Level appear to understand the concepts underlying the component and attempts to implement its elements. But implementation is sporadic, intermittent, or otherwise not entirely successful. Additional reading, discussion, visiting classrooms of other teachers, and experience (particularly supported by a mentor) will enable the teacher to become proficient in this area.</td>
<td>Teachers performing at the Unsatisfactory Level appear to understand the concepts underlying the component. Working on the fundamental practices associated with the elements will enable the teacher to grow and develop in this area.</td>
</tr>
</tbody>
</table>
| **Key Traits**  
• Performance is consistently of very high quality at levels from a “master” teacher  
• Classroom seems to run itself... “seamless”  
• Students work as a community | **Key Traits**  
• Performance is consistently of good quality- as expected of a proficient tenured teacher  
• Know content, students, and curriculum  
• Broad repertoire of strategies | **Key Traits**  
• Performance is minimally competent for teachers early in their careers - characteristic of those new to the profession  
• Improvement is likely to occur with experience | **Key Traits**  
• Little to no evidence of understanding of content, students, and resources  
• Poor recordkeeping and low ethical standards  
• Rigid adherence to an instructional plan despite signs that revision is needed during instruction  
• Teacher may display behaviors below minimal licensing standard such as a chaotic |
of learners w/high level of engagement, motivation, and considerable responsibility for their own learning and activities  
• Move easily to Plan B when needed  
• Possess a sophisticated understanding of classroom dynamics  
• Implementation of activities may be rough or inconsistent  
environment (Component 2a) or treating students with sarcasm or put down (Component 2C)  
• Intervention is needed and a priority

An observer should not score an item unless there is specific evidence in the notes to support the judgment. For example, the notes might indicate, “student engagement is strong because all students were on task doing academic work, they participated or volunteered to participate in discussions, and their focused attention continued throughout the period of the lesson”.

Each observation item is scored by circling the appropriate rating at the bottom of the form, under the box for comments. N/A should be used if the rating item was not relevant to the observed lesson. It does not mean that an item was not present during the class because the teacher overlooked or failed to be effective at it. For example, if students were not engaged in learning because the teacher was not able to manage the class, the observer would score ‘unsatisfactory for both engagement and classroom management.

Overall rating for the observation: Rowan TRs are developing their skills as classroom teachers. No matter how they score on the classroom visit, all of them are expected to grow over time to become effective classroom teachers. Helpful observation ratings are those giving an honest assessment of what has been observed; that in turn, gives the TR a chance to get better where improvement is needed.

To be adequate as an overall assessment, all eight items must be scored as Basic or Proficient.  
Scoring a teaching observation as strong is likely to be a rare event for a teacher resident; at least six of the eight items must be Proficient or Distinguished for the overall teaching event to receive a strong.

<table>
<thead>
<tr>
<th>Teacher Subject Matter Knowledge</th>
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<tbody>
<tr>
<td>The lesson structure allows students to make sense of important concepts, going beyond efforts to “cover” the intended content area, to promote deep conceptual understanding of the key ideas in the content area.</td>
</tr>
</tbody>
</table>

Observers will look for evidence that:

- the resident’s teaching demonstrates a depth of content knowledge with regard to important science or mathematics topics,
- s/he presents science or math ideas and topics in a knowledgeable and effective manner, and
- the lesson integrates this content knowledge with appropriate pedagogical strategies for promoting student learning.

Evidence can include:

- questioning strategies that demonstrate the teacher’s knowledge of:
  - how students learn
  - how students understand the content area,
  - student misconceptions and mistakes,
- skillful facilitation of group discussions, and
- clear explanation of concepts, knowledge, and skills.

<table>
<thead>
<tr>
<th>Observer evidence and scores</th>
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<tbody>
<tr>
<td>Distinguished</td>
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</table>

Student Engagement & Rigor of Tasks students engage in during the lesson

Rigor and clarity of tasks: intellectual rigor and challenging ideas keep students engaged.
The teacher resident goes beyond simply relaying information to supporting the deeper exploration of the subject matter. Students are clear about the purpose and objectives of given tasks.

Evidence might include:
- The quality of instructional tasks in which students are expected to engage,
- The intellectual rigor and challenge of the tasks has the potential to keep students engaged in exploring and investigating concepts in a manner that leads them to deeper understanding of the material,
- Directions for the task are clear,
- Students have opportunities to clarify the task,
- Lesson objectives are clearly defined and communicated. (Note that for problem solving, inquiry, discovery, and lab activities, the objectives/results should not be stated in advance of the activity. A whole-class debriefing/summarizing discussion should bring this out.)
- During the lesson, it is made explicit to students why the content is important to learn.
- Teacher-to-student questions, contributions, and responses
  - □ one-on-one □ in small-group settings, and □ in whole-class settings.
- Student-to-student questions, contributions, and responses
  - □ one-on-one □ in small-group settings, and □ in whole-class settings.
- Student-to-teacher questions, contributions, and responses
  - □ one-on-one □ in small-group settings, and □ in whole-class settings.

Student engagement: the majority of students are on task throughout the class because the teacher involves all students in the lesson.
The teacher’s instructional strategies are effective in encouraging students to explore and be engaged in relevant mathematics or science concepts.

Evidence includes actions such as:
- encouraging non-volunteers to participate,
- encouraging students who dominate to give others the opportunity to participate,
- facilitating student-student interaction,
- checking in with hesitant learners
- walking around the room to monitor and assessing student progress and understanding, and
- verbally engaging students.

Student engagement:
The teacher maximizes the amount of time students in the class are engaged in specific, meaningful, content-rich tasks and activities. Students are on task throughout the class.

On-task behavior might include:
- working on assigned tasks,
- asking questions about the subject-matter
- being engaged in discussions about the subject-matter,
- providing answers,
- following established routines and procedures for transition points, grouping, and
- assisting other students

Observer evidence and scores

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<tr>
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Assessment & Evidence of student learning during the lesson

Students in the class are learning the content taught during the class. Specifically, students are able to explain/discuss what they are working on and why. Observers should make judgments about this indicator by focusing on K12 students and not on the teacher resident.

Evidence of learning includes:
- students expressing their knowledge and understanding of the topic through academic writing and/or explanations that employ academic language;
- students demonstrating how well they understand lesson content and their progress toward learning goals through their work,
- responses to teacher questions,
- discussion in small groups, and
- other participation in the class that includes evidence for learning.
- students self-assess whether they have achieved the lesson objective and provide feedback to the teacher,
- students monitor their own progress, identify their own errors and seek additional opportunities for practice.

An effective teacher resident uses knowledge gained from questioning and formative assessments to gauge what students know, the accuracy of their knowledge, and where they have made mistakes, and s/he makes adjustments during the lesson when formative assessment demonstrates that students did not understand. Observers should look for the effectiveness of teacher strategies for monitoring student progress should also focus on how the teacher uses the information to inform his or her instruction.

Evidence might include:
- How frequently the teacher uses different ways to check for student understanding, including:
  - walking around to look at the work of individual students or groups, and
  - using questions to gauge student understanding,
- How the teacher uses formative assessment effectively to monitor the progress of all students, through individual, small group, or whole class actions.
- Tests or quizzes

Informal assessment: formative assessment to monitor the progress of all students.
These strategies might include formal assessments like quizzes, tests, or papers, as well as informal assessments through discussions with the class, with groups of students, and with individual students as well as teacher observations. Teacher resident activities might include for example pre lesson questions that engage students in an observation at the beginning of the lesson.

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</table>

Differentiated instruction

Effective teacher residents respond to each learner’s needs in order to maximize student growth and individual success through ongoing assessment and adjustment of instruction.

Evidence might include:
- providing authentic learning opportunities and tasks for all students are equally interesting and equally engaging, so that each child feels challenged to understand, apply, and move on to the next learning stage;
- observing the teacher resident working with the whole class, individuals, and small groups;
- using lesson materials that are academically challenging for all students;
- pacing of the lesson overall and for individual students in ways responsive to observable academic, emotional, social, and physical student needs;
- monitoring the progress of individuals and small groups, allowing for extra time, or giving additional tasks to students who complete the general assignment more quickly than others;
- flexible grouping and (re)grouping students for different tasks; and
- ensuring that students who complete work ahead of others move to another task and are not left to themselves.

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<td>Distinguished</td>
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</table>
Classroom Management & Structures and Routines

The teacher resident plans for and facilitates a safe environment that enables all students to participate actively and appropriately in discussions and activities.

The teacher resident’s classroom management strategies create a classroom environment that:

- is safe;
- is relatively free of behavioral disruptions;
- maximizes instructional time; and
- communicates high expectations for behavior.

Evidence can include

- Lessons and activities are designed and implemented in an organized and structured manner that supports student learning.
- The amount of time available for instruction is maximized through time-saving routines for transitions and administrative tasks.
- Students understand the routines and quickly and easily participate in learning activities and transition between activities.
- Students are given opportunities to learning, practicing, and reinforcing routines;
- Students are given opportunities to learn, practice, and follow rules; and
- Students are given opportunities to learn and understand established consequences.

Observer evidence and scores

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</table>

Observe various aspects of the teacher's practice, including classroom management, structure, and routines, to assess their effectiveness and impact on student learning.
Introduction and Overview of edTPA
(Education Teacher Performance Assessment) for Secondary Education

Purpose

The purpose of edTPA Secondary Education, a nationally available performance-based assessment, is to measure novice teachers’ readiness to teach science and/or mathematics in the secondary grades. The assessment is designed with a focus on student learning and principles from research and theory. It is based on findings that successful teachers:

- develop knowledge of subject matter, content standards, and subject-specific pedagogy;
- develop and apply knowledge of varied students’ needs;
- consider research and theory about how students learn;
- reflect on and analyze evidence of the effects of instruction on student learning.

As a performance-based assessment, edTPA is designed to engage candidates in demonstrating their understanding of teaching and student learning in authentic ways.

Overview of the Assessment

The edTPA Secondary Education assessment varied for each subject area. In effect there are separate handbooks for Secondary Education in Math and Science. In either case there are three tasks required to be addressed:

1. Planning for Instruction and Assessment
2. Instructing and Engaging Students in Learning
3. Assessing Student Learning

The edTPA Secondary Education assessment is designed for teacher education programs that plan to implement the full edTPA Secondary Education (Tasks 1–3), which requires candidates to demonstrate their readiness to teach by completing the tasks.

edTPA Secondary Education Handbook

Please be sure to go to edTPA.com and download the edTPA Secondary Math Handbook (if you are a prospective math educator) OR the edTPA Secondary Science Handbook (if you are a prospective science educator) You will need this for each and every step of the process as you complete Tasks 1, 2, & 3.
Full Residency Secondary edTPA Math/ Science Timeline

NOTE: Be wary of your school setting, grade level, days off of school, and testing that may impact the exact weeks/dates. Please reference edTPA directions and accompanying rubrics in your respective edTPA Secondary Education Handbook and this handbook, to assist your responses at all times!

- Deadlines for TK20 submission: May 16, 2019
- Deadline for Pearson submission: May 23, 2019 (expect scores reported by June 13, 2019)

<table>
<thead>
<tr>
<th>Week</th>
<th>edTPA Residency Timeline Checklist</th>
</tr>
</thead>
</table>
| Prior to Week 1 | - Visit edTPA.com and download the edTPA Handbook for Secondary Education.  
- Read the following sections in the Handbook: Introduction and Task 1 Planning  
- Create a folder on your laptop for edTPA files  
- Created a password protected backup folder for edTPA files on a flashdrive  
- Look up the School Report Card for your placement  
- Contact your collaborating teacher and introduce yourself  
- Exchange contact information between you and your collaborating teacher |
| 1 | - I have discussed the students in my class with my Collaborating Teacher  
- I have reviewed all IEPs ~or~ There are no IEPs for students in my class  
- I have reviewed all 504 plans ~or~ There are no 504s for students in my class  
- I have begun to take notes on the learning needs of my students |
| 2 | - I have identified at least 2 classroom examples for at least 3 learning theories  
- I have completed the Context for Learning Segment  
- I have personalized the video permission letter/form  
- I have discussed video permission letter/form with my cooperating teacher  
- I have obtained permission from my principal to send home the letter/form  
  - I have to send home the letter/form  
  - I have already sent home the letter/form  
- I have asked all of the adults who work in my classroom to sign the video permission form  
- I have talked with my university supervisor about video-recording the learning segment |
| 3 | - I have chosen the 3-5 lesson segment that I will teach  
- TOPIC_________________________  
- Central Focus_________________________  
- I have backed up my files  
- I have made a practice video (in seminar)  
- I am collecting the permission letters/forms from students in focus class |
| 4 | - I have a list of all of the students who can and cannot be video-ed  
- I have a list of adults who can and cannot be video-ed  
- I have discussed the materials and strategies for the lessons in my learning segment with my cooperating teacher and university supervisor |
| 5 | - I have written my first draft of all 3-5 lesson plans  
- I have identified the language function for the learning segment  
- I have included supports I will provide focusing on using the academic language in the plan  
- I have included specific assessments in each plan  
- I have defined the evaluation criteria  
- I have at least one written, formal assessment that will yield data  
- I have written specific differentiations/adaptations in each plan for all students with IEPs/504s ~or~  
- I have written specific differentiations/adaptations in each plan for at least one student with special learning needs  
- I have begun writing the planning commentary (Task 1)  
- I have written citations for the textbooks I will be using |
<table>
<thead>
<tr>
<th>Week</th>
<th>edTPA Residency Timeline Checklist</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 (cont’d)</td>
<td>- [ ] I have decided on what I will use to video&lt;br&gt; - [ ] I know who will take the video (who?)&lt;br&gt; - [ ] I have backed up my files</td>
</tr>
<tr>
<td>6</td>
<td>- [ ] I have organized all files&lt;br&gt; - [ ] I have been revising my learning segment and planning commentary&lt;br&gt; - [ ] I have projected a date for video-recording&lt;br&gt; - [ ] I have backed up my files</td>
</tr>
<tr>
<td>7</td>
<td>- [ ] I have been proofreading Task 1&lt;br&gt; - [ ] I have made sure all files are named correctly (see the Evidence Chart in the Handbook)&lt;br&gt; - [ ] I have confirmed a date for video-recording&lt;br&gt; - [ ] I have backed up my files</td>
</tr>
<tr>
<td>8</td>
<td>- [ ] I have been proofreading Task 1&lt;br&gt; - [ ] I have made sure all files are named correctly (see the Evidence Chart in the Handbook)&lt;br&gt; - [ ] I have planned or conducted video-recording&lt;br&gt; - [ ] I have backed up my files</td>
</tr>
<tr>
<td>9</td>
<td>- [ ] I have completed and posted all parts of Task 1 on Tk20&lt;br&gt; - [ ] I have made sure all files are named correctly (see the Evidence Chart in the Handbook)&lt;br&gt; - [ ] I have planned or conducted video-recording&lt;br&gt; - [ ] I have backed up my files</td>
</tr>
<tr>
<td>10</td>
<td>- [ ] I have completed videotaping, reviewed video, &amp; uploaded them to Tk20 in James 2108&lt;br&gt; - [ ] I have completed and posted both parts of Task 2 on Tk20&lt;br&gt; - [ ] I have backed up my files, including the video and pictures&lt;br&gt; - [ ] I have begun to analyze the assessment for the whole class and the 3 focus students&lt;br&gt; - [ ] I continue proofreading&lt;br&gt; - [ ] I have made sure all files are named correctly (see the Evidence Chart in the Handbook)</td>
</tr>
<tr>
<td>11</td>
<td>- [ ] Transfer to Pearson&lt;br&gt; - [ ] Submit a complete copy including video – all files electronically&lt;br&gt; - [ ] Give Rowan University permission to use my edTPA and video for instructional purposes with other RU students.</td>
</tr>
<tr>
<td>12</td>
<td>- [ ] I have reviewed all files at edTPA.com and received an email from Pearson stating &quot;Your Secondary Science (or Math) assessment has been submitted...&quot; before the deadline.</td>
</tr>
</tbody>
</table>
Assignments and Responsibilities To Think About and Discuss with Supervisors
(Add others as appropriate for placement)

○ Decide upon due dates for each as appropriate for your placement: (Suggested dates included in parentheses)
  ○ Review College of Education MA STEM Residency Handbook (Week 1) Review edTPA Secondary Handbook (Week 1)
  ○ Review Charlotte Danielson Teacher Performance Evaluation Rubric --to be used for Midterm and Final (Week 1 and throughout the semester!)

○ Decide upon what you will be using to show for your planning and teaching:
  ○ Necessary tools:
    ○ Lesson Plans (you can use the lesson plan format used by your collaborative teacher unless otherwise noted by your supervisor or methods instructor. For edTPA make sure you use lesson plan formats that are extensive and represent well what your teaching demonstrates.)
  ○ Suggested helpful tools:
    ○ Notebook (Organize first week; maintain throughout the semester)
    ○ Observation Write-ups (maintain throughout the semester- optional)

○ Complete and submit on TK20 edTPA Tasks 1, 2, and 3 Complete the internal OR external submission process, as required

○ Be sure to work on the following to enhance your Residency experience and to assist with specific indicators on your Midterm and Final Evaluations. Discuss with your collaborating teacher and Supervisor as appropriate.

  ○ Context: Gather information on district, school, and students (begin completing the Context form in your edTPA handbook)
  ○ Assessments and Grading
    ▪ Grade Book/Electronic Grade Book?/Grading System
    ▪ Method for sharing assessments with students and parents
    ▪ Role with Parents
    •
    ○ Involvement with and Contribution to School Events Involvement with Community IEPs, ELLs, …
  ○ Personal Professional Development Plan (for Midterm Evaluation)

Note that the start and end of your residency follows your placement school academic calendar.
MA in STEM Education
Professional Improvement Plan (PIP) Conference Form
Rowan University

The Professional Improvement Plan Conference is designed to improve a resident fellow’s performance in the program as a result of reported concerns. During the conference, concerns will be discussed and a plan for improvement will be created on this form. This is different from the 10-day Plan as the due date for expected performance is flexible and assigned by parties involved. It is up to the supervisor and collaborative teacher’s discretion to decide which plan to pursue based on the level of the concern.

<table>
<thead>
<tr>
<th>Name of Teacher Resident:</th>
<th>Date Meeting held:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of Initiator of Conference:</td>
<td>Name of PIP Monitor:</td>
</tr>
</tbody>
</table>

### Areas of Concern and Evidence

<table>
<thead>
<tr>
<th>Danielson Framework indicator that needs to be addressed</th>
<th>Description of Concern</th>
</tr>
</thead>
</table>

### Plan for Improvement and Evidence

<table>
<thead>
<tr>
<th>Professional plan that needs to be addressed (indicate specific performance while identifying the objectives and/or goals resident needs to reach)</th>
<th>Due date (identify the date by which resident needs to accomplish basic/proficient performance for the professional plan)</th>
</tr>
</thead>
</table>

NOTE: Failure to meet any aspect of this plan by the given due date(s) will result in:

This plan has been reviewed and agreed to by the following:

Teacher Resident: __________________________________________ Date: ______________
(Signature)

Supervisor: __________________________________________ Date: ______________
(Signature)

Improvement Plan Monitor: __________________________________________ Date: ______________
(Signature)

Witness (must be affiliated professionally with the resident): __________________________________________ Date: ______________
(Printed Name)
(Signature)

NOTE: Once completed and signed, the original document must be provided to the program coordinator/advisor for filing.
Ten-Day Improvement Plan

Prior to the initiation and implementation of a Ten-Day Plan the supervisor must discuss this with the Clinical Resident and Collaborating Teacher.

Start Date: ___________________________  End Date: ___________________________

Resident: ______________________  Cooperating Teacher: ___________________________
(Print)  (Print)

Supervisor: ______________________  School: ___________________________
(Print)  (Print)

This Ten-Day Plan is designed in collaboration by the university supervisor, collaborating teacher, and the teacher resident named above to improve his/her performance in the residency experience. The plan is intended to assist said resident in meeting standard(s)/indicator(s) of the Clinical Residency Teacher Resident Performance Evaluation Rubric. All residents must meet expectations of all indicators prior to the end of the semester. The collaborating teacher will maintain a daily feedback log on the teacher resident’s progress with each performance indicator of concern, review it with the teacher resident, and send that log via e-mail to the supervisor and teacher resident. An infraction of any aspect of this plan will require an eligibility meeting on campus with the resident, supervisor, and department chair.


<table>
<thead>
<tr>
<th>Ref. #</th>
<th>Performance Indicator(s) of Concern</th>
<th>Evidence of Improvement</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

Comments:

This plan has been reviewed and agreed to by the following:

Teacher Resident: ___________________________  Date: ___________________________
(Signature)

Collaborate Teacher: ___________________________  Date: ___________________________
(Signature)

University Supervisor: ___________________________  Date: ___________________________
(Signature)

This plan has been reviewed by:

The Student Progress Committee Chair ___________________________  Date: ___________________________
(Signature)

The Department of STEAM Education Chair ___________________________  Date: ___________________________
(Signature)

<table>
<thead>
<tr>
<th>Ref. #</th>
<th>Performance Indicator(s) of Concern</th>
<th>Evidence of Improvement</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>Does not consistently provide expectations of behavior and does not follow through with appropriate consequences.</td>
<td>Students know exactly what behavior is expected. Teacher posted behavioral expectations on bulletin board. Teacher has appropriate set of consequences for misbehavior.</td>
<td>Daily as observed by collaborating teacher or University supervisor.</td>
</tr>
<tr>
<td>4.1 5.1</td>
<td>Classroom instruction lacks understanding of developmental differences in students' learning needs.</td>
<td>Uses appropriate instructional strategies to meet the needs of individual learners.</td>
<td>Daily as observed by collaborating teacher or University supervisor.</td>
</tr>
<tr>
<td>6.5</td>
<td>Pace and flow of class instruction is too slow and permits too much nonproductive time.</td>
<td>Instruction shows smooth pacing and makes best use of teaching time.</td>
<td>Daily as demonstrated through instruction. Anecdotal records to be kept by collaborating teacher and University supervisor.</td>
</tr>
<tr>
<td>8</td>
<td>Spoken and written English contains pronunciation and grammatical errors.</td>
<td>Models accurate spoken and written English.</td>
<td>Collaborating teacher and University supervisor.</td>
</tr>
<tr>
<td>8</td>
<td>Oral directions are given without the full attention of all students.</td>
<td>Develops effective listening strategies with students when listening for oral directions.</td>
<td>Daily as demonstrated through instruction. Anecdotal records to be kept by supervisor.</td>
</tr>
<tr>
<td>12.1</td>
<td>Does not address the needs of all students.</td>
<td>Demonstrates successful practices and techniques to address learners' needs.</td>
<td>Daily as demonstrated through instruction. Anecdotal records to be kept by collaborating teacher and University supervisor.</td>
</tr>
<tr>
<td>12.3</td>
<td>Does not consistently fulfill professional or other school responsibilities.</td>
<td>Meets all required school responsibilities including appropriate deadlines, written responsibilities, and assigned duties.</td>
<td>Daily as demonstrated through instruction. Anecdotal records to be kept by collaborating teacher and University supervisor.</td>
</tr>
</tbody>
</table>
Discontinuance of Teacher Residency Assignment

The Teacher Residency may be discontinued upon request of the teacher resident, the school district or the College of Education at Rowan University. In the event that this should happen, the following procedures will be followed.
(Please visit the COE Policies and Procedures website: http://www.rowan.edu/colleges/education/documents/COEPolicies.pdf)

1. As soon as the university supervisor becomes aware of a problem he/she will initiate an on-site conference with the resident and collaborating teacher. The building administrator and/or program coordinator may be included.

2. The problem will be defined and a Ten Day written remedial plan with a timeline will be developed in consultation with the resident, collaborating teacher, and supervisor. The university supervisor will keep anecdotal records of progress or lack thereof.

3. If the problem cannot be remediated within 10 working days, a meeting will be held at the University with the supervisor, teacher resident, and the department chair. The Office of Field Experiences Director or designee might also attend. The supervisor will bring the following documents to the meeting:
   a) the previous remediation plan with an explanation of why it was not successful
   b) all supervisor's observations, evaluations, and records
   c) all collaborating teacher and district input

4. After reviewing all pertinent data and following a discussion of this data as well as other pertinent information with attendees, this group, in item 3 above, will make a recommendation for discontinuance of the placement for the balance of the semester. Replacement can occur when requirements for successful placement have been met. The department will assume responsibility for monitoring resident progress toward completion of the requirements for successful replacement.

5. The department chair or co-chair, in consultation with the supervisor, will complete the Discontinuance of Clinical Residency form, make copies for the resident, supervisor and department, and forward the original to the Office of Field Experiences (OFE). If replacement of the resident is to occur, the department will arrange for a consultation with the Office of Field Experiences Director to ensure that OFE plans collaboratively with the department and the student to effect a successful replacement.

6. Discontinuance by Partner School/District At any time before or during clinical practice, the school district can direct the University to remove a resident from his/her assignment. For example, in an interview or meeting prior to the assignment, the district may determine that the teacher resident would not make a positive contribution to the educational system in the district; or during the assignment, school authorities may feel that the teacher resident is not living up to the responsibilities they expect. In either case, or for instances not specified, the University will comply with the district's request to remove a teacher resident from a particular assignment. In several situations, the New Jersey Commissioner of Education has ruled that pre-service teaching is a privilege extended by local school districts to colleges and their students. Emphasis is placed on the fact that it is a privilege rather than a right for Rowan University students to be accommodated by a school for their clinical practice assignments. This privilege can be terminated at any time by the school district.

7. Discontinuance by Rowan University The authority of the University may also terminate clinical practice assignments. The College of Education, through the approved program of teacher certification, is entrusted with the responsibility to recommend for certification only those individuals who can show that they possess the competencies necessary for becoming a successful teacher. Pursuant to this obligation, university supervisors must make assessments concerning a teacher resident's competence in the field through evaluative visits. If, during the clinical practice period, in the professional judgment of the University supervisor, and in consultation with the collaborating teacher, it is concluded that the teacher resident does not demonstrate the appropriate knowledge, skills, and dispositions for becoming a successful teacher, the resident may be removed from the assignment. In addition, failure to comply with any College of Education regulations concerning clinical practice as stated in this handbook may be cause for termination of the assignment.

8. Procedures to be Followed Regarding Discontinuance of Clinical Residency In the event that immediate discontinuance is requested by the school district or if the University has determined that continuation of clinical practice for even a short period would be harmful to the students, school district or University, the teacher resident will immediately be removed from the assignment with a follow-up meeting at the University within three (3) working days. It is required that the same procedure be followed should a resident decide to discontinue.

9. Discontinuance up to Mid-Semester If discontinuance is to occur and reassignment for the current semester is not recommended, the teacher resident will initiate and sign a "Withdrawal from Course Request" form, available from the Registrar's Office. Upon receipt of this form, the Registrar will enter a "W" on the student's transcript. The withdraw notation of "W" is not a grade.

10. Discontinuance after Mid-Semester Residents' requests for withdrawals after mid-semester are considered exceptional and are only granted for sufficient reasons beyond the residents' control. The withdrawal process will follow the policies and
11. **Reapplication for Clinical Residency** The resident may reapply for clinical practice within three semesters after all suggestions for remediation have been met. The application must be presented to the Teacher. Ed. Dept by the third semester after withdrawal. With permission from his/her department, the resident will reenroll in clinical practice and pay all tuition and fees as listed.

12. **Discontinuance by Teacher Resident** Residents may discontinue clinical practice for reasons of serious illness or other extenuating circumstance. Residents must follow the same procedure as if the University were discontinuing clinical practice.

13. Discontinuances will affect student loan status. Residents are urged to consult with financial aid.
MA in STEM Education Discontinuance Report

<table>
<thead>
<tr>
<th>Student's Name</th>
<th>ID #</th>
<th>Today's date</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Area ___________________________ Quarter/Semester: Fall ______ Spring ______ University
Supervisor _______________________ TOSD Resident Yes ______ No ______ District
School ___________________________ Coordinating Teacher(s) __________________ Contact Administrator (if applicable) __________________

Date of Discontinuance ______ Education Advisor __________________
Reason for Discontinuance (additional pages if needed):

Cooperating Teacher(s) is/are in agreement with the decision: YES ____ NO ____ Supporting documentation attached? YES __________ NO ______
Graduation Plans (for spring semester residents): Walking ____ Not Walking ____ Other Graduation Plans: ______________

ACTION PLAN

______Clinical Residency is recommended to be repeated at: _______current placement ____ new placement.
______Clinical Residency is NOT recommended to be repeated.
______Clinical Residency is recommended to be repeated after remediation. Recommendations for remediation and successful placement include the following:
  Task/s to be completed by resident: __________________________ Documentation to be provided of task completion: __________________________ (All documentation must be submitted to the Department Secretary, Department of STEAM Education)
  By (date): __________________________

Teacher Resident ___________________________ Date ____________
Supervisor's Signature ___________________________ Date ____________
Department Chair’s Signature ___________________________ Date ____________ Director
of Field Experiences ___________________________ Date ____________ ATTACHMENTS

(For Office of Field Experiences Copy Only)

______ Copies of all completed observation reports from university supervisor
______ Copies of all completed observation reports from cooperating teacher
______ Remediation plan for the student

________

1. Discontinuances are removals from current clinical residency placement. Residents may, if recommended, repeat clinical residency once, as long as remediation

2. Withdrawal from Clinical Residency for any reason may affect student financial aid.
Residency Observation Form
(Formal observations must be submitted via TK20)

<table>
<thead>
<tr>
<th>Resident:</th>
</tr>
</thead>
<tbody>
<tr>
<td>School/District:</td>
</tr>
<tr>
<td>Collaborating Teacher:</td>
</tr>
<tr>
<td>Lesson Date:</td>
</tr>
<tr>
<td>Pre-Observation Date &amp; Time:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Supervisor:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content Area &amp; Grade Level:</td>
</tr>
<tr>
<td>Lesson Duration:</td>
</tr>
<tr>
<td>Observation #: 1 2 3 4 5 ____ Long or Short Observation (circle one)</td>
</tr>
<tr>
<td>Post-Observation Date &amp; Time:</td>
</tr>
</tbody>
</table>

**Instructions:** Provide formative ratings for the resident on each of the indicators using the Performance Definitions in the Framework for Teaching rubric (The Danielson Group). For ratings of Distinguished (D), Unsatisfactory (U) or Not Observed (NO), a rationale must be included. For ratings of Unsatisfactory (U), clear recommendations for growth must be in the SUGGESTIONS section on page 2. Write a description of the lesson context including any extenuating circumstances. In the SUGGESTIONS section, indicate any specific suggestions that should be addressed prior to or during the next observation, which should include those related to ratings of NO.

<table>
<thead>
<tr>
<th>Domain</th>
<th>Indicators and Ratings (U, B, P, D or NO)</th>
<th>Rationale (Required for D, U or NO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Observation Planning/Preparation</td>
<td>1a. Knowledge of Content and Pedagogy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1b. Knowledge of Students</td>
<td></td>
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<tr>
<td></td>
<td>1c. Instructional Outcomes</td>
<td></td>
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<tr>
<td></td>
<td>1d. Knowledge of Resources</td>
<td></td>
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<tr>
<td></td>
<td>1e. Designing Coherent Instruction</td>
<td></td>
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<tr>
<td></td>
<td>1f. Designing Student Assessment</td>
<td></td>
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<tr>
<td></td>
<td>Program-specific (SPA) Planning/Prep Indicators</td>
<td></td>
</tr>
<tr>
<td>Classroom Observation Environment/Instruction</td>
<td>2a. Creating an environment of respect/rappor</td>
<td></td>
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<td></td>
<td>2b. Establishing a culture for learning</td>
<td></td>
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<tr>
<td></td>
<td>2c. Managing classroom procedures</td>
<td></td>
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<tr>
<td></td>
<td>2d. Managing student behavior</td>
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<tr>
<td></td>
<td>2e. Organizing physical space</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3a. Communicating with students</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3b. Questioning and discussion techniques</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3c. Engaging students in learning</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3d. Using assessment in instruction</td>
<td></td>
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<tr>
<td></td>
<td>3e. Demonstrating flexibility/responsiveness</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Program-specific Environment/Instruction Indicators</td>
<td></td>
</tr>
<tr>
<td>Post-Observation Professional</td>
<td>4a. Reflecting on teaching</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4b. Maintaining accurate records</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4c. Communicating with families</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4d. Participating in a professional community</td>
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<tr>
<td></td>
<td>4e. Growing and developing professionally</td>
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<tr>
<td></td>
<td>4f. Showing professionalism</td>
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<td></td>
<td>Program-specific Professional Indicators</td>
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</tbody>
</table>
**Residency/Internship Midterm and Final Evaluation**  
(submitted via TK20)

<table>
<thead>
<tr>
<th>Resident:</th>
<th>Supervisor:</th>
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<tbody>
<tr>
<td>Program:</td>
<td>Collaborating Teacher:</td>
</tr>
<tr>
<td>District:</td>
<td>Subject/Grade:</td>
</tr>
<tr>
<td>School:</td>
<td>Date: Midterm/Final (circle one)</td>
</tr>
</tbody>
</table>

**Instructions:** Rate the resident on each of the components using the Performance Definitions in the Framework for Teaching rubric (The Danielson Group). For ratings of Distinguished or Proficient, a description of evidence to support the rating must be included in the comments section. For ratings of Basic or Unsatisfactory, clear recommendations for growth must be included in the comments section.

In order to be recommended for certification, the resident must receive at least a Basic rating for all indicators.

<table>
<thead>
<tr>
<th>Domain 1: Planning and Preparation</th>
<th>Rating</th>
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<tbody>
<tr>
<td>1a. Demonstrating knowledge of content and pedagogy.</td>
<td></td>
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<tr>
<td>1b. Demonstrating knowledge of students</td>
<td></td>
</tr>
<tr>
<td>1c. Setting instructional outcomes.</td>
<td></td>
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<tr>
<td>1d. Demonstrating knowledge of resources.</td>
<td></td>
</tr>
<tr>
<td>1e. Designing coherent instruction.</td>
<td></td>
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<tr>
<td>1f. Designing student assessments.</td>
<td></td>
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</tbody>
</table>

*Recommendations for U or B ratings/Evidence for D or P Ratings/Additional Comments:*

<table>
<thead>
<tr>
<th>Domain 2: Classroom Environment</th>
<th>Rating</th>
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</thead>
<tbody>
<tr>
<td>2a. Creating an environment of respect and rapport</td>
<td></td>
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<tr>
<td>2b. Establishing a culture for learning</td>
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<tr>
<td>2c. Managing classroom procedures</td>
<td></td>
</tr>
<tr>
<td>2d. Managing student behavior</td>
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<tr>
<td>2e. Organizing physical space</td>
<td></td>
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</tbody>
</table>

*Recommendations for U or B ratings/Evidence for D or P Ratings/Additional Comments:*

<table>
<thead>
<tr>
<th>Domain 3: Instruction</th>
<th>Rating</th>
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<tbody>
<tr>
<td>3a. Communicating with students.</td>
<td></td>
</tr>
<tr>
<td>3b. Questioning and discussion techniques</td>
<td></td>
</tr>
<tr>
<td>3c. Engaging students in learning</td>
<td></td>
</tr>
<tr>
<td>3d. Using assessment in instruction</td>
<td></td>
</tr>
<tr>
<td>3e. Demonstrating flexibility and responsiveness</td>
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</tr>
</tbody>
</table>

*Recommendations for U or B ratings/Evidence for D or P Ratings/Additional Comments:*

<table>
<thead>
<tr>
<th>Domain 4: Professional Responsibilities</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>4a. Reflecting on teaching</td>
<td></td>
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<tr>
<td>4b. Maintaining accurate records</td>
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<tr>
<td>4c. Communicating with families</td>
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<tr>
<td>4d. Participating in a professional community</td>
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<tr>
<td>4e. Growing and developing professionally</td>
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<tr>
<td>4f. Showing professionalism</td>
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</tbody>
</table>

*Recommendations for U or B ratings/Evidence for D or P Ratings/Additional Comments:*
Please also use the program’s SPA-specific rubric to evaluate the resident for midterm and final evaluations.

### Additional Comments

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#### Recommendation for Certification (TO BE FILLED OUT FOR FINAL EVALUATION ONLY)

The resident (circle one) **IS** / **IS NOT** recommended for certification in ____________________________________________

(Certification area as per the NJDOE).

*Supervisor’s Signature*  
*Date*

*Collaborating Teacher’s Signature*  
*Date*

*Resident’s Signature*  
*Date*
Frequently Asked Questions Concerning Residency

Q: Which calendar do I follow?
A: Follow the collaborating teacher’s calendar for the entire placement.

Q: What happens if a resident is sick or has a transportation emergency?
A: Resident should contact the supervisor and collaborating teacher the night before, if possible, or as early as possible the day that resident is calling out.

Q: Who gives the final grade to the resident?
A: The Rowan supervisor assigns the final grade with input from the collaborating teacher.

Q: Where might we collect evidence of meeting BASIC expectations?
A: Evidence could come from:
- Lesson and unit plans
- Classroom observations
- Resident-made materials and notebook
- Samples of technology created/used for instruction or communication with parents
- Assessment data
- Samples of student work
- edTPA submission
- Notes from observations, conversations, interviews, and research
- Reflective journals

Q: What might evidence of collaboration, community and partnerships look like?
A: Working with collaborating teachers, residents might:
- Write letters to families (e.g., introductions, new units, explanations of instruction, suggestions for family activities to support instruction)
- Send home weekly newsletters
- Make phone calls (Keep a detailed log!)
- Establish and maintain a website for families
- Implement dialogue journals with families
- Attend after-school functions
- Participate in family (Math, Literacy, Science, etc.) nights
- Invite guest speakers
- Hold family visitation days
- Bring families into classes as resources
- Integrate community resources into lessons
### APPENDIX

**NCTM NCATE/CAEP ADDENDUM**

**Indicators Specific to the Mathematics Education Program**  
**ROWAN UNIVERSITY COLLEGE OF EDUCATION**

<table>
<thead>
<tr>
<th>Candidate:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervisor:</td>
<td>Date:</td>
</tr>
</tbody>
</table>

**Instructions:** Rate the candidate on each of the components using the given rubric. For ratings of *Distinguished*, a description of evidence to support the rating must be included in the comments section. For ratings of *Basic* or *Unsatisfactory*, clear recommendations for growth must be included in the comments section. **In order to be recommended for certification, the candidate must receive at least a Basic rating for all indicators.**

1. **Apply knowledge of curriculum standards for secondary mathematics and their relationship to student learning within and across mathematical domains.** (NCTM NCATE/CAEP 3a)

   **D** Plans reflect the goals of the NCTM Standards and *integrate* the Mathematics CCSS for Content and Practices in meaningful ways. Appropriate Cumulative Progress Indicators are included.  
   Rationale identifies “big idea” aligned with standards and objectives.  
   **All** written unit/lesson outcomes are performance-based and aligned to the appropriate CCSS.  
   Plans consistently connect knowledge, understandings, and skills to big idea.

   **B** Plans reflect the goals of the NCTM Standards and *include* the CCSS including appropriate Cumulative Progress Indicators.  
   Rationale identifies “big idea” aligned with standards and objectives.  
   Plans inconsistently connect knowledge, understandings, and skills to big idea.  
   **Most** written unit/lesson outcomes are performance-based.

   **U** Plans do not adequately reflect the goals of the NCTM Standards and/or the CCSS OR plans do not include appropriate Cumulative Progress Indicators.  
   A “big idea” is not identified or is misidentified.  
   Written unit/lesson outcomes are not performance-based.

2. **Plan lessons and units that incorporate a variety of strategies, differentiated instruction for diverse populations, and mathematics-specific and instructional technologies in building all students’ conceptual understanding and procedural proficiency.** (NCTM NCATE/CAEP 3c)

   **D** Candidate consistently creates, selects, uses, and determines suitability of the wide variety of available resources (print, online, and human), mathematics curricula and teaching materials (including technology) for all students including those with special needs such as the gifted, challenged and speakers of other languages.  
   Candidate consistently selects, uses, and determines the suitability of a wide variety of print and on-line resources from professional mathematics and education organizations to enhance textbook-based lesson and unit plans.  
   Candidate consistently uses these multiple resources to plan units that incorporate **all** of the following in building all students’ conceptual understanding and procedural proficiency:  
   - a variety of strategies  
   - differentiated instruction for diverse populations, and  
   - mathematics-specific and instructional technologies.

   **B** Candidate selects, use, and determine the suitability of the wide variety of available resources (print, online, and human), mathematics curricula and teaching materials (including technology) for all students including those with special needs such as the gifted, challenged and speakers of other languages.

   For each unit planned, the candidate uses these resources to plan units that incorporate **one or two** of the following in building all students’ conceptual understanding and procedural proficiency:  
   - a variety of strategies  
   - differentiated instruction for diverse populations, and  
   - mathematics-specific and instructional technologies.
Candidate does not select, use, and/or determine the suitability of the wide variety of available resources (print, online, and human), mathematics curricula and teaching materials (including technology) for all students including those with special needs such as the gifted, challenged and speakers of other languages.

For each unit planned, the candidate does not use these resources to plan units that incorporate at least one of the following in building all students’ conceptual understanding and procedural proficiency:

- a variety of strategies
- differentiated instruction for diverse populations, or
- mathematics-specific and instructional technologies.
3. Provide students with opportunities to communicate about mathematics. (NCTM NCATE/CAE 3d)

| Candidate plans for and facilitates a variety of meaningful, original communicative activities in the classroom. Candidate knows the difference between mechanical and meaningful communicative exercises and uses them appropriately. Candidate designs and implements activities that promote cooperation and interaction and maximizes the time students have to communicate mathematically. |

| Candidate plans for and facilitates meaningful communicative activities in the classroom. Candidate knows the difference between mechanical and meaningful communicative exercises and usually uses them appropriately. Candidate facilitates pair/group activities and maximizes the time students have to use the target language. Candidate implements activities that promote cooperation and interaction and maximizes the time students have to communicate mathematically. Candidate provides clear directions and models for all activities. Candidate groups students appropriately and monitors group activities. Candidate conducts appropriate follow-up tasks (8.7). |

| Candidate does not plan or has difficulty facilitating meaningful communication. Candidate relies primarily on mechanical exercises. Candidate uses pair/group communicative activities minimally in class. Candidate rarely implements activities that promote cooperation and interaction. Directions given are unclear or inappropriate. Students are groups inappropriately for the planned activity. Group activities are not monitored appropriately causing students to be off-task. Candidate does not conduct follow-up tasks or chooses tasks that are inappropriate. |

4. Provide students with opportunities to make connections among mathematics, other content areas, everyday life, and the workplace. (NCTM NCATE/CAE 3d)

| Candidates consistently demonstrate how mathematical ideas interconnect and build on one another to produce a coherent whole. Candidate consistently uses connections among mathematical ideas to scaffold students’ understanding of mathematics. Candidate consistently applies mathematics in contexts outside of mathematics. Candidate consistently uses stimulating curricula and connects the mathematics being studied to students’ lives. Candidate integrates the history of mathematics without promoting stereotypes and biases and encourages students to think critically about cultural connections. |

| Candidate demonstrates how mathematical ideas interconnect and build on one another to produce a coherent whole. Candidate sometimes uses connections among mathematical ideas to scaffold students’ understanding of mathematics. Candidate sometimes applies mathematics in contexts outside of mathematics. Candidate sometimes uses stimulating curricula and makes efforts to connect the mathematics being studied to students’ lives. |

| Candidate does not demonstrate how mathematical ideas interconnect and build on one another to produce a coherent whole. Candidate makes few connections among mathematical ideas. Candidate infrequently applies mathematics in contexts outside of mathematics. Candidate does not use stimulating curricula and/or does not make efforts to connect mathematics being studied to students’ lives. Candidate includes the history of mathematics but presents stereotypical and/or biased views of the cultures presented. |

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

| Candidate’s assessment plans and procedures consistently are aligned to all instructional outcomes and the CCSS mathematical content standards and practices identified in lesson and unit planning documents. Candidate’s assessment plans consistently include multiple strategies, including listening to and understanding the ways students think about mathematics, to assess students’ mathematical knowledge, understanding, and skill. Candidate’s assessment plans consistently include clear criteria for assessing student work. Candidate assesses student progress through creative, performance-based, nontraditional assessments in addition to traditional testing formats. Candidate adapts assessment strategies for individual students as needs arise. |

| Candidate’s assessment plans and procedures consistently are aligned to most of the instructional outcomes and the CCSS mathematical content standards and practices identified in lesson and unit planning documents. Candidate’s assessment plans include multiple strategies to assess students’ mathematical knowledge, including listening to and understanding the ways students think about mathematics in addition to traditional testing formats. The candidate’s approach to using formative assessment is rudimentary, including only some of the instructional outcomes. Candidate’s assessment plans include criteria for assessing student work that are not always clear. |

| Candidate’s assessment plans and procedures are not aligned to most of the instructional outcomes and the CCSS mathematical content standards and practices identified in lesson and unit planning documents. Candidate’s assessment plans include only traditional testing formats to assess student learning and no formative assessments. Candidate’s assessment plans do not include criteria for assessing student work. The teacher has no plan to incorporate formative assessment in the lesson or unit. |

6. Monitor students’ progress, make instructional decisions, and measure students’ mathematical understanding and ability using formative and summative assessments. (NCTM NCATE/CAE 3g)

| Candidate enacts a coherent and systematic plan for using formative and summative assessments to monitor students’ progress, make instructional decisions, and measure students’ mathematical understanding and skill. Candidate’s plan includes frequent and timely assessment of and feedback to students, including reengaging students with the mathematics. |
Candidate provides opportunities for students to monitor and reflect on their progress. Candidate consistently modifies instruction in response to assessment results in ways that maximize student learning of mathematics. Candidate’s approach to using assessments is well-designed and includes student self-monitoring in addition to the teacher use of the assessment information.

<table>
<thead>
<tr>
<th>B</th>
<th>Candidate monitors students’ progress regularly but has not developed a coherent system for measuring students’ mathematical understanding and skill and making instructional decisions based on student progress. Formative and/or summative assessments are not always used systematically, regularly, or appropriately. Feedback to students is timely. Candidate modifies instruction in response to assessment results.</th>
</tr>
</thead>
</table>

Candidate rarely conducts formative and summative assessments to measure students’ mathematical understanding and monitor students’ progress. Candidate does not use assessment information to inform planning and instruction.

<table>
<thead>
<tr>
<th>U</th>
<th>7. Plan and create developmentally appropriate, sequential, and challenging learning opportunities grounded in mathematics education research in which students are actively engaged in building new knowledge from prior knowledge and experiences. (NCTM NCATE/CAEP 4b)</th>
</tr>
</thead>
</table>

Candidate consistently plans and creates developmentally appropriate, sequential, and challenging learning opportunities grounded in mathematics education research. Students are actively engaged in building new knowledge from prior knowledge and experiences. Candidate consistently leads classes in mathematical problem solving and in developing in-depth conceptual understanding and to help students develop and test generalizations. Candidate consistently provides opportunities for students to build new mathematical knowledge through problem solving. Candidate integrates reasoning and proof as fundamental aspects of mathematics. Candidate consistently provides opportunities for students to make and investigate mathematical conjectures. Candidate consistently provides opportunities for students to select and use various types of reasoning and methods of proof.

<table>
<thead>
<tr>
<th>D</th>
<th>Candidate plans and creates developmentally appropriate, sequential, and challenging learning opportunities grounded in mathematics education research in which students are actively engaged in building new knowledge from prior knowledge and experiences. Candidate provides some opportunities for students to apply and adapt a variety of appropriate strategies to solve problems. Candidate provides some opportunities for students to build new mathematical knowledge through problem solving. Candidate includes reasoning and proof as aspects of mathematics. Candidate provides some opportunities for students to make and investigate mathematical conjectures. Candidate provides some opportunities for students to select and use various types of reasoning and methods of proof.</th>
</tr>
</thead>
</table>

Candidate does not plan developmentally appropriate, sequential, and challenging learning opportunities grounded in mathematics education research in which students are actively engaged in building new knowledge from prior knowledge and experiences. Candidate provides few or no opportunities for students to apply and adapt a variety of appropriate strategies to solve problems. Candidate provides few or no opportunities for students to solve problems that arise in mathematics and those involving mathematics in other contexts. Candidate provides few or no opportunities for students to build new mathematical knowledge through problem solving. Candidate does not include reasoning and proof as fundamental aspects of mathematics. Candidate provides few or no opportunities for students to make and investigate mathematical conjectures. Candidate provides few or no opportunities for students to select and use various types of reasoning and methods of proof.

<table>
<thead>
<tr>
<th>U</th>
<th>8. Apply mathematical content and pedagogical knowledge to select and use instructional tools such as manipulatives and physical models, drawings, virtual environments, spreadsheets, presentation tools, and mathematics-specific technologies (e.g., graphing tools, interactive geometry software, computer algebra systems, and statistical packages); and make sound decisions about when such tools enhance teaching and learning, recognizing both the insights to be gained and possible limitations of such tools. (NCTM NCATE/CAEP 4c)</th>
</tr>
</thead>
</table>

Candidate seamlessly integrates various teaching tools including technology. Candidate uses knowledge of mathematics and pedagogy to select and seamlessly integrate appropriate technological tools, such as but not limited to, spreadsheets, dynamic graphing tools, computer algebra systems, dynamic statistical packages, graphing calculators, data-collection devices and presentation software. Candidate develops lessons that seamlessly integrate technology’s potential for building understanding of mathematical concepts and developing important mathematical ideas. Candidate selects and integrates seamlessly appropriate concrete materials for learning mathematics. Candidate articulates advantages and disadvantages of using particular instructional tools.

<table>
<thead>
<tr>
<th>D</th>
<th>Candidate use various teaching tools including technology. Candidate uses knowledge of mathematics and pedagogy to select and use appropriate technological tools, such as, but not limited to, spreadsheets, dynamic graphing tools, computer algebra systems, dynamic statistical packages, graphing calculators, data-collection devices and presentation software. Candidate develops lessons that use technology’s potential for building understanding of mathematical concepts and developing important mathematical ideas. Candidate selects and uses appropriate concrete materials for learning mathematics. Candidate articulates advantages and disadvantages of using particular instructional tools.</th>
</tr>
</thead>
</table>

Candidate uses various teaching tools including technology. Candidate uses knowledge of mathematics and pedagogy to select and use appropriate technological tools, such as, but not limited to, spreadsheets, dynamic graphing tools, computer algebra systems, dynamic statistical packages, graphing calculators, data-collection devices and presentation software. Candidate develops lessons that use technology’s potential for building understanding of mathematical concepts and developing important mathematical ideas. Candidate selects and uses appropriate concrete materials for learning mathematics. Candidate articulates advantages and disadvantages of using particular instructional tools.
<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>U</td>
<td>Candidate does not use various teaching tools including technology. Candidate does not use knowledge of mathematics and pedagogy to select and use appropriate technological tools. Candidate does not develop lessons that use technology’s potential for building understanding of mathematical concepts and developing important mathematical ideas. Candidate does not use appropriate concrete materials for learning mathematics.</td>
</tr>
<tr>
<td>D</td>
<td>9. Verify that secondary students demonstrate conceptual understanding; procedural fluency; the ability to formulate, represent, and solve problems; logical reasoning and continuous reflection on that reasoning; productive disposition toward mathematics; and the application of mathematics in a variety of contexts within major mathematical domains. (NCTM NCATE/CAEP 5a)</td>
</tr>
<tr>
<td>B</td>
<td>Candidate consistently verifies that that secondary students demonstrate:</td>
</tr>
<tr>
<td></td>
<td>• procedural fluency;</td>
</tr>
<tr>
<td></td>
<td>• logical reasoning and continuous reflection on that reasoning;</td>
</tr>
<tr>
<td></td>
<td>• the application of mathematics in a variety of contexts within major mathematical domains.</td>
</tr>
<tr>
<td>U</td>
<td>Candidate demonstrates the ability to verify that secondary students demonstrate at least 5 of the following:</td>
</tr>
<tr>
<td></td>
<td>• procedural fluency;</td>
</tr>
<tr>
<td></td>
<td>• logical reasoning and continuous reflection on that reasoning;</td>
</tr>
<tr>
<td></td>
<td>• the application of mathematics in a variety of contexts within major mathematical domains.</td>
</tr>
<tr>
<td>U</td>
<td>Candidate demonstrates the ability to verify that secondary students demonstrate fewer than 5 of the following:</td>
</tr>
<tr>
<td></td>
<td>• procedural fluency;</td>
</tr>
<tr>
<td></td>
<td>• logical reasoning and continuous reflection on that reasoning;</td>
</tr>
<tr>
<td></td>
<td>• the application of mathematics in a variety of contexts within major mathematical domains.</td>
</tr>
<tr>
<td>D</td>
<td>10. Collect, organize, analyze, and reflect on diagnostic, formative, and summative assessment evidence and determine the extent to which students’ mathematical proficiencies have increased as a result of their instruction. (NCTM NCATE/CAEP 5c)</td>
</tr>
<tr>
<td>B</td>
<td>Candidate consistently enacts a coherent system for collecting, organizing, analyzing, and reflecting on diagnostic, formative, and summative assessment evidence and determining the extent to which students’ mathematical proficiencies have increased as a result of their instruction.</td>
</tr>
<tr>
<td>U</td>
<td>For at least one unit of study, the candidate demonstrates the ability to collect, organize, analyze, and reflect on diagnostic, formative, and summative assessment evidence and determine the extent to which students’ mathematical proficiencies have increased as a result of their instruction.</td>
</tr>
<tr>
<td>U</td>
<td>The candidate is unable to demonstrate the ability to collect, organize, analyze, and reflect on diagnostic, formative, and summative assessment evidence and determine the extent to which students’ mathematical proficiencies have increased as a result of their instruction for at least one unit of study.</td>
</tr>
<tr>
<td>D</td>
<td>11. Take an active role in their professional growth by participating in professional development experiences that directly relate to the learning and teaching of mathematics. (6a)</td>
</tr>
<tr>
<td>B</td>
<td>Candidate regularly seeks out, attends, participates in, and reports out on multiple professional development experiences directly related to the learning and teaching of mathematics. Candidate consistently integrates what s/he learned into planning, instruction, and assessment in ways that enhance learning for all students.</td>
</tr>
<tr>
<td>U</td>
<td>Candidate attends and participates in several professional development experiences directly related to the learning and teaching of mathematics. Candidate integrates what s/he learned into planning, instruction, and assessment in ways that enhance student learning.</td>
</tr>
<tr>
<td>U</td>
<td>Candidate either does not attend or does not participate in several professional development experiences directly related to the learning and teaching of mathematics. Candidate seldom integrates what s/he learned into planning, instruction, and assessment in ways that enhance student learning.</td>
</tr>
<tr>
<td>D</td>
<td>12. Engage in continuous and collaborative learning that draws upon research in mathematics education to inform practice; enhances learning opportunities for all students’ mathematical knowledge development; involves colleagues, other school professionals, families, and various stakeholders; and advances their development as a reflective practitioner. (NCTM NCATE/CAEP 6b)</td>
</tr>
<tr>
<td>B</td>
<td>Candidate takes a lead role in continuous and collaborative learning that draws upon research in mathematics education to inform practice and enhances learning opportunities for all students’ mathematical knowledge development.</td>
</tr>
<tr>
<td>Candidate regularly seeks out and involves <em>multiple different</em> stakeholders in enhancing learning opportunities for all students’ mathematical development and shows evidence of a positive effect on student learning due to this involvement. Candidate advances own development as a reflective practitioner through engagement in reflective writing and professional discussions around their own teaching beyond reflections for and feedback from field supervisor.</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td></td>
</tr>
<tr>
<td>B Candidate participates in continuous and collaborative learning that draws upon research in mathematics education to inform practice and enhances learning opportunities for all students’ mathematical knowledge development. Candidate involves <em>at least two different</em> stakeholders in enhancing learning opportunities for students’ mathematical development and shows evidence of a positive effect on student learning due to this involvement. Candidate advances own development as a reflective practitioner through engagement in reflective writing and professional discussions around their own teaching.</td>
<td></td>
</tr>
<tr>
<td>U Candidate does not participate in <em>continuous</em> and <em>collaborative</em> learning that draws upon research in mathematics education to inform practice and enhances learning opportunities for all students’ mathematical knowledge development. Candidate does not involve stakeholders to enhance learning opportunities for students’ mathematical development. Candidate does not advance own development as a reflective practitioner.</td>
<td></td>
</tr>
<tr>
<td>13. <strong>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. (NCTM NCATE/CAEP 7c)</strong></td>
<td></td>
</tr>
<tr>
<td>D Candidate seeks and engages systematically in purposeful observations of others’ teaching that enable her/him to examine the nature of mathematics, how mathematics should be taught, and how students learn mathematics, with particular attentions to tasks, discourse, environment, and assessment. Candidate engages in careful, sophisticated analysis of observations, articulates findings, and applies what s/he learns to improve student learning of mathematics.</td>
<td></td>
</tr>
<tr>
<td>B Candidate engages in observations of others’ teaching that enable her/him to examine the nature of mathematics, how mathematics should be taught, and how students learn mathematics, with particular attention on tasks, discourse, environment, and assessment. Candidate demonstrates the ability to analyze observations and apply what s/he learns to improve student learning of mathematics, with attention to tasks, discourse, environment, and assessment.</td>
<td></td>
</tr>
<tr>
<td>U Candidate does not engage in observations of others’ teaching that enable her/him to examine the nature of mathematics, how mathematics should be taught, and how students learn mathematics, with particular attention to tasks, discourse, environment, and assessment. Candidate engages in observations but does not analyze observations and/or apply what s/he learns to improve student learning of mathematics.</td>
<td></td>
</tr>
</tbody>
</table>
### NSTA NCATE ADDENDUM

*Indicators Specific to the Science Education Program Rowan University College of Education*

**Candidate:**

<table>
<thead>
<tr>
<th>Supervisor/Teacher:</th>
<th>____________________________________________________________________________</th>
<th>Signature: __________________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td>____________________________________________________________________________</td>
<td></td>
</tr>
</tbody>
</table>

Evaluate the candidate’s development of the following indicators based on your observation of the candidate’s performance and/or examination of his/her records and other materials. Transfer your ratings to the Scantron form. Use the following rating key: **Exceeds Expectations (EE)**, **Meets Expectations (ME)**, **Does Not Meet Expectations (DN)**. Provide comments where ratings of “EE”, “N/A” or “DN” are given. **Science education candidates must receive a minimum rating of (ME) on each category in the final rating, otherwise they will fail the program.** To achieve a rating of (ME) on each category, candidates must demonstrate in at least 70% of their instruction, the required actions indicated within category descriptors. Ratings for standard 9d may not be applicable (N/A) to candidates whose core content background is physics, chemistry or physical science unless the context in which candidates are teaching are conducive to applicability of this standard. In such a case rating on this indicator of either (EE), (ME) or (DN) would hold regardless of candidate core content background. Otherwise a rating of (N/A) is noted.

<table>
<thead>
<tr>
<th>1. The candidate practices legal and ethical responsibilities of science teachers for the welfare of their students (NSTA 9a)</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EE</strong> Candidate <em>always</em> follows the legal and ethical precedents for the welfare of students in the science classroom and discusses reasons for such rules with students.* Candidate explicitly presents, displays and practices safety rules with students. This includes but not limited to setting guidelines for working safely in the lab and or classroom at the beginning throughout and at the end of every session. Provides students with a plan for behavior management including but not limited to specific desired behaviors for a safe science lab and classroom, key rules, consequences for each rule plus special guidelines and consequences for working with living organisms (if Biology) or working with chemicals (if Chemistry) and/ or working with all types of equipment (Physics, Chemistry, Biology and Physical science labs and classrooms); provides proper fire emergency procedures</td>
<td></td>
</tr>
<tr>
<td><strong>ME</strong> Candidate <em>mostly</em> shows in at least 70% of his/her sessions that he/she follows the legal and ethical precedents for the welfare of students in the science classroom and discusses reasons for such rules with students.* Candidate explicitly presents, displays and practices safety rules with students. This includes but not limited to setting guidelines for working safely in the lab and or classroom at the beginning throughout and at the end of every session. Provides students with a plan for behavior management including but not limited to specific desired behaviors for a safe science lab and classroom, key rules, consequences for each rule plus special guidelines and consequences for working with living organisms (if Biology) or working with chemicals (if Chemistry) and/ or working with all types of equipment (Physics, Chemistry, Biology and Physical science labs and classrooms)</td>
<td></td>
</tr>
<tr>
<td><strong>DN</strong> <em>Only once</em> does the candidate explicitly presents, displays and practices safety rules with students. This includes but not limited to setting guidelines for working safely in the lab and or classroom at the beginning throughout and at the end of every session. Provides students with a plan for behavior management including but not limited to specific desired behaviors for a safe science lab and classroom, key rules, consequences for each rule plus special guidelines and consequences for working with living organisms (if Biology) or working with chemicals (if Chemistry) and/ or working with all types of equipment (Physics, Chemistry, Biology and Physical science labs and classrooms)</td>
<td></td>
</tr>
</tbody>
</table>

**Rationale for Rating**

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46
2. The candidate practices safe and proper techniques for the preparation of all materials used in science instruction. (NSTA 9b)  

| Rating | EE Candidate always establishes and follows procedures for the safe labeling, handling of chemicals and other materials in preparing for lab/classroom use. Uses approved techniques as noted by NSES and NSTA teaching safety standards for the preparation of equipment and chemicals prior, during and after instruction. Shows proper understanding of MSDS and reflects this in their preparation of all chemical materials used in the classrooms. **Stays informed of potential hazards and legal concerns. Communicates them to other teachers to maintain a school environment free of potential problems.**
| ME Candidate mostly establishes and follows procedures in at least 70 % of his/her teaching performance for the safe labeling, handling of chemicals and other materials in preparing for lab/classroom use. Uses approved techniques as noted by NSES and NSTA teaching safety standards for the preparation of equipment and chemicals prior, during and after instruction. Shows proper understanding of MSDS and reflects this in their preparation of all chemical materials used in the classrooms. **Stays informed of potential hazards and legal concerns. Communicates them to other teachers to maintain a school environment free of potential problems.**
| DN Candidate only once establishes and follows procedures in his/her teaching performance for the safe labeling, handling of chemicals and other materials in preparing for lab/classroom use. Candidate does not uses approved techniques as noted by NSES and NSTA teaching safety standards for the preparation of equipment and chemicals prior, during and after instruction. Candidate does not show proper understanding of MSDS and this is not reflected in their preparation of all chemical materials used in the classrooms. Candidate’s information about potential hazards and legal concerns is lacking and not current. **Candidate does not communicate safe and proper techniques for the preparation of all materials with other teachers and performance does not seek to maintain a school environment free of potential problems.** |

### Rationale for Rating

3. The candidate practices safe and proper techniques for the storage, of all materials used in science instruction. (NSTA 9b)  

| Rating | EE Candidate always establishes and follows procedures for the safe storage of chemicals and other materials. This includes but not limited to using appropriate NSES and NSTA safety guidelines in storing chemicals and equipment; Identifying potential hazards from improperly stored chemicals and or equipment following appropriate safety procedures to rectify the situation; Labeling and storing materials according to appropriate and relevant safety guidelines (e.g. CSSS, NSTA, NSES, American Chemical Society); Maintaining an up-to-date and readily available MSDS file for all materials used in the classroom. **Candidate demonstrates knowledge of potential hazards and legal concerns if chemicals and or equipment are not stored properly. Communicates them to other teachers to maintain a school environment free of potential problems.**
| ME Candidate mostly establishes and follows procedures for the safe storage of chemicals and other materials, at least 70 % of the time. This includes but not limited to using appropriate NSES and NSTA safety guidelines in storing chemicals and equipment; Identifying potential hazards from improperly stored chemicals and or equipment following appropriate safety procedures to rectify the situation; Labeling and storing materials according to appropriate and relevant safety guidelines (e.g. CSSS, NSTA, NSES, American Chemical Society); Maintaining an up-to-date and readily available MSDS file for all materials used in the classroom. **Candidate demonstrates knowledge of potential hazards and legal concerns if chemicals and or equipment are not stored properly. Communicates them to other teachers to maintain a school environment free of potential problems.** |
**DN** Candidate rarely establishes and follows procedures for the safe storage of chemicals and other materials. This includes but not limited to not using appropriate NSES and NSTA safety guidelines in storing chemicals and equipment; Unable to identify potential hazards from improperly stored chemicals and or equipment and does not follow appropriate safety procedures to rectify the situation; Does not label and store materials according to appropriate and relevant safety guidelines (e.g. CSSS, NSTA, NSES, American Chemical Society); Does not maintain a current and readily available MSDS file for all materials used in the classroom. **Candidate demonstrates little knowledge of potential hazards and legal concerns if chemicals and or equipment are not stored properly and fails to communicate to other teachers for the purpose of maintaining a school environment free of potential problems.**

<table>
<thead>
<tr>
<th>Rationale for Rating</th>
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</thead>
<tbody>
<tr>
<td><strong>4. The candidate practices safe and proper techniques for the supervision of all materials used in science instruction. (NSTA 9b)</strong></td>
</tr>
</tbody>
</table>

**EE** Candidate always establishes and follows procedures for the proper supervision of chemicals and/ or equipment in the lab/classroom. This includes but not limited to providing safety instruction and cautions when chemicals, equipment and or living organisms are being handled; Supervises the use and transfer of chemicals, equipment and or living organisms; Is familiar with all chemicals, equipment, supplies and or living organisms within the lab/classroom; Maintains and generates an appropriate inventory of chemicals, equipment and supplies as well as all materials used in the lab/classroom; Maintains and monitors all safety equipment to make sure they are functional (ex: proper electrical outlets, fire extinguishers). **Candidate stays informed of potential hazards and legal concerns regarding the supervision of chemicals, equipment and supplies. Communicates these to other teachers to maintain a school environment free of potential problems.**

<table>
<thead>
<tr>
<th>Rationale for Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ME</strong> Candidate mostly establishes and follows procedures for the proper supervision of chemicals and/ or equipment in the lab/classroom, at least 70% of the time. This includes but not limited to providing safety instruction and cautions when chemicals, equipment and or living organisms are being handled; Supervises the use and transfer of chemicals, equipment and or living organisms; Is familiar with all chemicals, equipment, supplies and or living organisms within the lab/classroom; Maintains and generates an appropriate inventory of chemicals, equipment and supplies as well as all materials used in the lab/classroom; Maintains and monitors all safety equipment to make sure they are functional (ex: proper electrical outlets, fire extinguishers). <strong>Candidate stays informed of potential hazards and legal concerns regarding the supervision of chemicals, equipment and supplies. Communicates these to other teachers to maintain a school environment free of potential problems.</strong></td>
</tr>
</tbody>
</table>

**DN** Candidate rarely establishes and follows procedures for the proper supervision of chemicals and/ or equipment in the lab/classroom. This includes but not limited to not providing safety instruction and cautions when chemicals, equipment and or living organisms are being handled; Not supervising the use and transfer of chemicals, equipment and or living organisms; not being familiar with all chemicals, equipment, supplies and or living organisms within the lab/classroom; Not maintaining and generating an appropriate inventory of chemicals, equipment and supplies as well as all materials used in the lab/classroom. No maintenance and monitoring of safety equipment to make sure they are functional (ex: proper electrical outlets, fire extinguishers). **Candidate does not seek to learn about the potential hazards and legal issues regarding the supervision of chemicals, equipment and supplies in the lab/ classroom. Does not attempt to share information with or learn from other teachers to maintain a school environment free of potential problems.**

<table>
<thead>
<tr>
<th>Rationale for Rating</th>
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</thead>
<tbody>
<tr>
<td><strong>48</strong></td>
</tr>
</tbody>
</table>
5. The candidate practices safe and proper techniques for the disposal and dispensing of all materials used in science instruction. (NSTA 9b)

| Rating | 
|--------|---|
| EE     | Candidate *always* establishes and follows procedures for the proper disposal and dispensing of chemicals, equipment, supplies and/or dead or living organisms (includes microorganisms). This includes but not limited to the dispensing, disposal and cleanup of hazardous and nonhazardous chemicals; The dispensing, disposal and cleanup of damaged and non damaged equipment (ex: chemical glassware); The dispensing, disposal and cleanup of living organism’s shelters (ex: mice cages, fish aquarium, terrariums) and/or habitats; the proper removal of possible biological and or chemical contaminants. **Candidate stays informed of potential hazards and legal concerns regarding the proper disposal of chemicals, equipment and/or living /dead organisms.** Candidate communicates these to other teachers to maintain a school environment free of potential problems. |
| ME     | Candidate *mostly* establishes and follows procedures for the proper disposal and dispensing of chemicals, equipment, supplies and/or dead or living organisms (includes microorganisms), **at least 70 %** of the time. This includes but not limited to the dispensing, disposal and cleanup of hazardous and nonhazardous chemicals; The dispensing, disposal and cleanup of damaged and non damaged equipment (ex: chemical glassware); The dispensing, disposal and cleanup of living organism’s shelters (ex: mice cages, fish aquarium, terrariums) and/or habitats; the proper removal of possible biological and or chemical contaminants. **Candidate stays informed of potential hazards and legal concerns regarding the proper disposal of chemicals, equipment and/or living /dead organisms.** Candidate communicates these to other teachers to maintain a school environment free of potential problems. |
| DN     | Candidate *rarely* establishes and follows procedures for the proper disposal and dispensing of chemicals, equipment, supplies and/or dead or living organisms (includes microorganisms). This includes but not limited to improperly dispensing, disposing and cleaning hazardous and nonhazardous chemicals; Improper dispense, disposal and cleanup of damaged and non damaged equipment (ex: chemical glassware); Improper dispense, disposal and cleanup of living organism’s shelters (ex: mice cages, fish aquarium, terrariums) and/or habitats; Improper removal of possible biological and or chemical contaminants. **Candidate does not demonstrate that they are well informed of potential hazards and legal concerns regarding the proper disposal of chemicals, equipment and/or living /dead organisms.** Candidate does not communicate (or seek to learn more about) with other teachers how to maintain a school environment free of potential problems. |

**Rationale for Rating**

6. Candidate follows emergency procedures, appropriate for the activities and the abilities of students. (NSTA 9c)  

| Rating | 
|--------|---|
| EE     | Candidate *always* plans, practices and enforces safety procedures in all activities in the classroom. This includes and is not limited to proper emergency procedures in compliance with placement school emergency procedures and those of NSTA, NSES, CSSS, in case of fire, power outage, medical accident (ex: skin cuts, chemical spills on skin), natural disaster(ex: earthquakes), chemical accidents (ex: gas leaks); Candidate always reminds and/or demonstrates emergency procedures to students in the classroom emphasizing that safety is a priority in science; Candidate is knowledgeable of actions to be taken during an emergency, prevents and/or reports an emergency; Candidate appropriately responds to hazardous situations once identified. **Candidate always takes action to prevent hazards and communicates needs and potential problems to administrators.** |
| ME     | Candidate *mostly* plans, practices and enforces safety procedures in most activities in the classroom, **at least 70%** of the time. This includes and is not limited to proper emergency procedures in compliance with placement school emergency procedures and those of NSTA, NSES, CSSS, in case of fire, power outage, medical accident (ex: skin cuts, chemical spills on skin), natural disaster(ex: earthquakes), chemical accidents (ex: gas leaks); Candidate always reminds and/or demonstrates emergency procedures to students in the classroom emphasizing that safety is a priority in
science; Candidate is knowledgeable of actions to be taken during an emergency, prevents and/or reports an emergency; Candidate appropriately responds to hazardous situations once identified. **Candidate mostly takes action to prevent hazards and communicates needs and potential problems to administrators.**

| DN | Candidate rarely plans, practices and enforces safety procedures in most activities in the classroom. This includes and is not limited to improper emergency procedures used that are not in compliance with placement school emergency procedures and those of NSTA, NSES, CSSS, in case of fire, power outage, medical accident (ex: skin cuts, chemical spills on skin), natural disaster (ex: earthquakes), chemical accidents (ex: gas leaks); Candidate does not remind and/or demonstrate emergency procedures to students in the classroom emphasizing that safety is a priority in science; Candidate is not knowledgeable of actions to be taken during an emergency, does not prevent and/or report an emergency; Candidate does not appropriately respond to hazardous situations once identified. **Candidate does not takes action to prevent hazards and communicates needs and potential problems to administrators.** |

### Rationale for Rating

#### 7. Candidate maintains safety equipment appropriate for the activities and the abilities of students. (NSTA 9c)

| EE | Candidate always checks, monitors and keeps up to date with all equipment, chemicals, biological organisms, materials and supplies used in the lab/classroom. This includes but not limited to candidate always seeking to rectify any problems with equipment; Reporting damaged equipment and getting it maintained; Does not use any equipment not suitable for student age group. **Candidate always takes action to prevent hazards and communicates needs and potential problems to administrators.** |
| ME | Candidate mostly checks, monitors and keeps up to date with all equipment, chemicals, biological organisms, materials and supplies used in the lab/classroom, at least 70% of the time. This includes but not limited to candidate always seeking to rectify any problems with equipment; Reporting damaged equipment and getting it maintained; Does not use any equipment not suitable for student age group. **Candidate mostly takes action to prevent hazards and communicates needs and potential problems to administrators.** |
| DN | Candidate rarely checks, monitors and keeps up to date with all equipment, chemicals, biological organisms, materials and supplies used in the lab/classroom. This includes but not limited to candidate never seeking to rectify any problems with equipment; Ignoring or not reporting damaged equipment for maintenances; Uses equipment that is not suitable for student age group. **Candidate rarely takes action to prevent hazards and communicates needs and potential problems to administrators.** |

### Rationale for Rating

#### 8. Candidate ensures safety procedures appropriate for the activities and the abilities of students. (NSTA 9c)

| EE | Candidate always presents, displays, explains, practices and enforces safety procedures in all lessons in the lab/classroom. This includes but not limited to candidate always demonstrating appropriate safety procedures for students to follow prior to the beginning of any activity; Candidate always monitoring students for appropriate implementation of noted safety procedures in the lab/classroom; Candidate evaluating student implemented safety procedures in the lab/classroom; Candidate always reflecting on safety procedure practices and rectifying any problems with existing safety procedures for maintaining safety as a priority in science. **Candidate continuously takes action to implement safety procedures in the class and in the school to prevent hazards and communicates needs and potential problems to administrators.** |
| ME | Candidate **mostly** presents, displays, explains, practices and enforces safety procedures in all lessons in the lab/classroom, **at least 70%** of the time. This includes but not limited to candidate always demonstrating appropriate safety procedures for students to follow prior to the beginning of any activity; Candidate always monitoring students for appropriate implementation of noted safety procedures in the lab/classroom; Candidate evaluating student implemented safety procedures in the lab/ classroom; Candidate always reflecting on safety procedure practices and rectifying any problems with existing safety procedures for maintaining safety as a priority in science. **Candidate usually takes action to implement safety procedures in the class and in the school to prevent hazards and communicates needs and potential problems to administrators.** |
| DN | Candidate **rarely** presents, displays, explains, practices and enforces safety procedures in all lessons in the lab/classroom. This includes but not limited to candidate not demonstrating appropriate safety procedures for students to follow prior to the beginning of any activity; Candidate not monitoring students for appropriate implementation of noted safety procedures in the lab/classroom; Candidate not evaluating student implemented safety procedures in the lab/ classroom; Candidate not reflecting on safety procedure practices and not rectifying any problems with existing safety procedures for maintaining safety as a priority in science. **Candidate never takes action to implement safety procedures in the class and in the school to prevent hazards and communicates needs and potential problems to administrators.** |

**Rationale for Rating**

9. Treat all living organisms used in the classroom or found in the field in a safe, humane, and ethical manner. (NSTA 9d)

| EE | Candidate **always** attends to, obeys and enforces rules for the safe, proper and ethical treatment of plants and animals. This includes but is not limited to candidate always knowing and complying with laws and professional standards for lab/ classroom treatment of plants and animals as well as handling microorganisms; demonstrating proper awareness of controlling the use of sentient, usually vertebrate animals; maintaining the environment of the plants, animals and microbial organisms; disposing properly of plant, animal as well as microbial waste; responding to illness of plants, animals and ensuring that they have food, water, space, shelter and care needed for their well being; Candidate relays and enforces such proper behavior treatment of plants, animals and/or microorganisms to students in lessons in the lab/ classroom or field. **Candidate always discusses reasons for such rules with students to enforce proper care and treatment of all living organisms** |
| ME | Candidate **mostly** attends to, obeys and enforces rules for the safe, proper and ethical treatment of plants and animals, **at least 70%** of the time. This includes but is not limited to candidate always knowing and complying with laws and professional standards for lab/ classroom treatment of plants and animals as well as handling microorganisms; demonstrating proper awareness of controlling the use of sentient, usually vertebrate animals; maintaining the environment of the plants, animals and microbial organisms; disposing properly of plant, animal as well as microbial waste; responding to illness of plants, animals and ensuring that they have food, water, space, shelter and care needed for their well being; Candidate relays and enforces such proper behavior treatment of plants, animals and/or microorganisms to students in lessons in the lab/ classroom or field. **Candidate usually discusses reasons for such rules with students to enforce proper care and treatment of all living organisms** |
| DN | Candidate **rarely** attends to, obeys and enforces rules for the safe, proper and ethical treatment of plants and animals. This includes but is not limited to candidate not knowing and complying with laws and professional standards for lab/ classroom treatment of plants and animals as well as handling microorganisms; not demonstrating proper awareness of controlling the use of sentient, usually vertebrate animals; maintaining the environment of the plants, animals and microbial organisms; not disposing properly of plant, animal as well as microbial waste; not responding to illness of plants, animals and ensuring that they have food, water, space, shelter and care needed for their well being; Candidate |
does not relay and enforce such proper behavior treatment of plants, animals and/or microorganisms to students in lessons in the lab/classroom or field. **Candidate never discusses reasons for such rules with students to enforce proper care and treatment of all living organisms**

<table>
<thead>
<tr>
<th>Rating</th>
<th>Rationale for Rating</th>
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</thead>
<tbody>
<tr>
<td>N/A</td>
<td>This rating is not applicable as the context and background of the candidate isn’t conducive to this standard</td>
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</table>

### 10. Treat all living organisms used in the classroom or found in the field with respect to legal restrictions on their collections, keeping and use. (NSTA 9d)

| EE     | Candidate **always** follows legal restrictions (both state and national) on keeping, collecting and using living organisms in the lab/classroom and field. This includes but not limited to candidate providing and displaying in their lab/classroom/field instruction a list of state and national policies regarding the collection, withholding and use of particular plants, animals and microorganisms; Candidate demonstrates appropriate procedures on how to collect plants, animals and their parts from the wild; Candidate demonstrates appropriate procedures in reporting and documenting the appropriate collection of living organisms within legal restrictions; Candidate produces appropriate safety strategies to maintain and use collected living organisms in the lab/classroom; Candidate instructs students on potential harmful living organisms and their parts; Candidate follows appropriate safety methods when collecting, keeping and or using potentially harmful living organisms in the lab/classroom and/or in the field. **Candidate identifies and emphasizes the significance of proper treatment and care for all living organisms.** |
| ME     | Candidate **mostly** follows legal restrictions (both state and national) on keeping, collecting and using living organisms in the lab/classroom and field, **at least 70%** of the time. This includes but not limited to candidate providing and displaying in their lab/classroom/field instruction a list of state and national policies regarding the collection, withholding and use of particular plants, animals and microorganisms; Candidate demonstrates appropriate procedures on how to collect plants, animals and their parts from the wild; Candidate demonstrates appropriate procedures in reporting and documenting the appropriate collection of living organisms within legal restrictions; Candidate produces appropriate safety strategies to maintain and use collected living organisms in the lab/classroom; Candidate instructs students on potential harmful living organisms and their parts; Candidate follows appropriate safety methods when collecting, keeping and or using potentially harmful living organisms in the lab/classroom and/or in the field. **Candidate usually identifies and emphasizes the significance of proper treatment and care for all living organisms.** |
| DN     | Candidate **rarely** follows legal restrictions (both state and national) on keeping, collecting and using living organisms in the lab/classroom and field. This includes but not limited to candidate not providing and displaying in their lab/classroom/field instruction a list of state and national policies regarding the collection, withholding and use of particular plants, animals and microorganisms; Candidate does not show appropriate procedures on how to collect plants, animals and their parts from the wild; Candidate does not show appropriate procedures in reporting and documenting the appropriate collection of living organisms within legal restrictions; Candidate rarely produces appropriate safety strategies to maintain and use collected living organisms in the lab/classroom; Candidate does not inform students on potential harmful living organisms and their parts; Candidate does not follow appropriate safety methods when collecting, keeping and or using potentially harmful living organisms in the lab/classroom and/or in the field. **Candidate rarely identifies and emphasizes the significance of proper treatment and care for all living organisms.** |
| N/A    | This rating is not applicable as the context and background of the candidate isn’t conducive to this standard |
### Rationale for Rating

<table>
<thead>
<tr>
<th>11. Candidates engage students successfully in developmentally appropriate inquiries that require student to develop concepts and relationships from their observations, data, and inferences in a scientific manner (NSTA 3b)</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EE</strong> At least 90% of candidate’s teaching and lesson plans show the use of one or more inquiry based models as identified by both NSES and NSTA standards. Candidate’s teaching emphasizes the construction of relevant in depth science content knowledge (biology, physics, physical science or chemistry) through the use of these inquiry models. Candidates always demonstrate the proper use of inquiry based strategies (such as constructive questioning techniques) in using the models to promote students development of relevant scientific concepts and relationships by focusing on an understanding of the scientific process (e.g. making observations, collecting or showing evidence, making inferences etc…)</td>
<td></td>
</tr>
<tr>
<td><strong>ME</strong> At least 70% of candidate’s teaching and lesson plans show the use of one or more inquiry based models as identified by both NSES and NSTA standards. Candidate’s teaching emphasizes the construction of relevant in depth science content knowledge (biology, physics, physical science or chemistry) through the use of these inquiry models. Candidates demonstrate the proper use of inquiry based strategies (such as constructive questioning techniques) in using the models to promote students development of relevant scientific concepts and relationships by focusing on an understanding of the scientific process (e.g. making observations, collecting or showing evidence, making inferences etc…)</td>
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</tr>
<tr>
<td><strong>DN</strong> Less than 70% of candidate’s teaching and lesson plans show the use of one or more inquiry based models as identified by both NSES and NSTA standards. Candidate’s teaching does not demonstrate the proper use of inquiry models to promote students development of relevant scientific concepts and relationships by focusing on an understanding of the scientific process (e.g. making observations, collecting or showing evidence, making inferences etc…)</td>
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</table>

### Rationale for Rating

<table>
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<tr>
<th>12. Candidates reflect an understanding of socially important issues related to science and technology in their field of licensure as well as processes used to analyze and make decision of such issues (NSTA 4a)</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EE</strong> At least 90% of candidate’s teaching focuses on relevant science content knowledge where candidate relates and extends student engagement in the scientific process to social and cultural issues presented as a result of the historical development of science and the current use of technology in society. Candidate proceeds to demonstrate major arguments presented as a result of such issues. Candidate promotes student discourse through group dynamic strategies (such as cooperative learning) in the analysis and decision making of such issues. Candidate conducts and uses assessment strategies to promote further analysis of such issues and the synthesis of possible future solutions.</td>
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</tr>
<tr>
<td><strong>ME</strong> At least 70% of candidate’s teaching focuses on relevant science content knowledge, candidate relates and extends student engagement in the scientific process to social and cultural issues presented as a result of the historical development of science and the current use of technology in society. Candidate promotes student discourse through group dynamic strategies (such as cooperative learning) in the analysis and decision making of such issues. Candidate conducts and uses assessment strategies to promote further analysis of such issues and the synthesis of possible future solutions.</td>
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</tr>
<tr>
<td><strong>DN</strong> Less than 70% of candidate’s teaching relates or extends student engagement in the scientific process to social and cultural issues presented as a result of the historical development of science and the current use of technology in</td>
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</table>
society. Candidate does not promote student discourse through group dynamic strategies (such as cooperative learning) in the analysis and decision making of such issues. Candidate does not conduct nor uses assessment strategies to promote further analysis of such issues and the synthesis of possible future solutions.

**Rationale for Rating**

<table>
<thead>
<tr>
<th>13. Candidates engage students successfully in the analysis of problems, including consideration of risks, costs, and benefits of alternative solutions; relating these to knowledge, goals and values of the student (NSTA 4b)</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EE</strong> At least 90% of candidate’s teaching of either or an integration of relevant science content area (e.g. biology, chemistry, physics or physical science) demonstrates analysis of science conceptual knowledge which extends into student real life applications. Candidate demonstrates the application of science concepts by providing real life applications for students. Candidate assesses students knowledge, goals and values towards such applications by emphasizing the consideration of risks, costs and benefits of alternative solutions to future applications.</td>
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</tr>
<tr>
<td><strong>ME</strong> At least 70% of candidate’s teaching of either or an integration of relevant science content area (e.g. biology, chemistry, physics or physical science) demonstrates analysis of at least one science based conceptual knowledge which extends into student real life applications. Candidate demonstrates the application of science concepts by providing real life applications for students. Candidate assesses students knowledge, goals and values towards such applications by emphasizing the consideration of risks, costs and benefits of alternative solutions to future applications.</td>
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<tr>
<td><strong>DN</strong> Less than 70% of candidate’s teaching of either or an integration of relevant science content area (e.g. biology, chemistry, physics or physical science) does not demonstrate an analysis of science conceptual knowledge extending into student real life applications. Candidate does not demonstrate the application of science concepts by providing real life applications for students. Candidate does not assess students knowledge, goals and values towards such applications by emphasizing the consideration of risks, costs and benefits of alternative solutions to future applications.</td>
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**Rationale for Rating**

<table>
<thead>
<tr>
<th>14. Candidates engage students successfully in the studies of the nature of science including when possible, the critical analysis of false or doubtful assertions, made in the name of science (NSTA 2c)</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EE</strong> At least 90% of candidate’s teaching demonstrates the difference between scientific and non scientific knowledge. Candidates always produce, from their relevant science content background, analogies to historical experiments done in science that have produced doubtful and fallible assertions. Candidates, using teaching strategies (such as discrepant events), demonstrate the generation of scientific fallacies and misconceptions. Candidates always promote student group discourse to critically analyze student observed fallacies and or misconceptions.</td>
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<tr>
<td><strong>ME</strong> At least 70% of candidate’s teaching demonstrates the difference between scientific and non scientific knowledge. Candidates produce, from their relevant science content background, analogies to historical experiments done in science that have produced doubtful and fallible assertions. Candidates, using teaching strategies (such as discrepant events), demonstrate the generation of scientific fallacies and misconceptions. Candidates promote student group discourse to critically analyze student observed fallacies and or misconceptions.</td>
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</tr>
<tr>
<td><strong>DN</strong> Less than 70% of candidate’s teaching demonstrates the difference between scientific and non scientific knowledge. Candidates do not produce, from their relevant science content background, analogies to historical experiments done in science that have produced doubtful and fallible assertions. Candidates do not demonstrate the generation of scientific fallacies and misconceptions form the use of particular teaching strategies. Candidates do not promote student group</td>
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</table>
Rationale for Rati