# UNDERGRADUATE CURRICULUM COMMITTEE (UCC)PROPOSAL FORMhttp://www.ric.edu/webcommunications/images/SealWithText_Small_Black.png

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| A.1. [Course or program](#30j0zll) | **New course: SED 315:** Mathematics Teaching in a diverse classroom |  |
| A.2. [Proposal type](#3znysh7) | **Course creation****:**  |
| A.3. [Originator](#2et92p0) | **Vivian La Ferla** | [Home department](#tyjcwt) **Educational Studies** |
| A.4. [Context and Rationale](#3dy6vkm)  | This is the fifth course in the pedagogical sequence of the secondary education program, following SED 303, which focuses on inquiry into the areas of Science, Technology, Engineering and Mathematics. This course is new but draws on the content of SED 411: Content and Pedagogy in Secondary Mathematics Education. This course is the Practicum I for Mathematics Education and occurs in the Spring semester, one year prior to student teaching. It builds on the skills and practices learned in the pedagogical sequence. This four credit/fourteen week course will be taken by all candidates in secondary Mathematics education. This course reinforces the belief that *mathematics for teaching* is different from mathematics for oneself, and that at its core, mathematics for teaching carries an implication for being prepared to teach *mathematics for all students.* Within this mathematical context students will:* work toward a critical view of their future classroom and their role within it.
* explore and develop tools to become the mathematics teacher they envision
* become aware of tensions between current practices and practices promoting education of *all* students.
* consider advantages of working within a professional learning community and factors that contribute to or detract from such communities.
* challenge/broaden/deepen their mathematical understanding of topics in the middle and high school classroom: Number and Operations, Algebra, Functions, Modeling, Geometry, Probability and Statistics.

Students will interact with practicing teachers and students in local high schools to: * learn and practice critical observation (listening, feeling) of mathematics classrooms.
* become clinical practitioners by implementing engaging, inquiry-based lessons that address *all* students in the classroom with mentoring by the cooperating teacher and college supervisor.
* challenge (develop) both experiential and theoretical images of mathematics classrooms through observation and implementation.
* consider the value and use of documents such as lesson plans, textbooks, state and national standards, and local curriculum guides.
* examine the secondary mathematics department structure as it relates to professional learning communities and understand their current and future role in such a community.

In SED 315, candidates will review and discuss the plethora of high-quality mathematics curricula available and in use in the USA, in particular, Rhode Island. Examining inquiry-based curricula and pedagogies that promote mathematics for all. The mathematical progressions from middle to high school level will be studied in order to understand the role of each CCSSM strand in mathematics. A second key feature of the course will be an emphasis on the teaching of mathematics. Candidates will learn how to tailor curriculum, pedagogy, and community building strategies to the strengths and needs of students from a range of cultural and mathematical backgrounds. Candidates will explore various strategies for curricula types and mathematical problem selection, scaffolding, differentiated instruction, supporting struggling and reluctant mathematics learners, purposeful questioning, and ways of making real world connections between mathematical content and student’s lives. We will focus on a range of approaches (websites, Apps, technology, project-based model-enhancing approaches). Third, candidates will study and practice techniques around generating mathematical discourse in the classroom. Candidates will practice, make presentations (or mini-lessons), design student-centered explorations, problem posing methodologies, and collaborative inquiry including technological approaches to deepening knowledge (DESMOS, GeoGebra). Candidates will also explore questioning strategies providing meaningful feedback, assessing mathematical knowledge and using small/large group work, and activities to deepen content knowledge.This practicum-style course will involve a 3 week clinical preparation component in which students will plan and implement lessons based on concepts, approaches, and strategies explored in class.The main goal of this course is for candidates to link being a mathematician to teaching mathematics in middle and high schools.  |
| A.5. [Student impact](#2jxsxqh) | Students in the secondary education programs take this course as part of the methods sequence which is part of the overall redesign.  |
| A.6. [Impact on other programs](#z337ya)  | This course will be required of all students in the secondary Mathematics education program.  |
| A.7. [Resource impact](#3j2qqm3) | [*Faculty PT & FT*](#1y810tw):  | **FSEHD faculty will teach this course.** |
| [*Library*:](#4i7ojhp) | **None** |
| [*Technology*](#2xcytpi) | **None** |
| [*Facilities*](#1ci93xb): | **None** |
| A.8. [Semester effective](#2s8eyo1) | **Fall 2019** |  |  |

B. [NEW OR REVISED COURSES](#3whwml4)

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|  | New |  |
| B.1. [Course prefix and number](#2bn6wsx)  | SED 315 |  |
| B.3. [Course title](#qsh70q)  | Mathematics Teaching in a diverse classroom |  |
| B.4. [Course description](#3as4poj)  | Students adapt mathematics knowledge into thoughtful, engaging, reform-based mathematics lessons to help *all* students learn using community-building, dialogic practices. Clinical preparation (3 weeks or equivalent).  |  |
| B.5. [Prerequisite(s)](#1pxezwc) |  **SED 303** |  |
| B.6. [Offered](#49x2ik5) | **Spring | |**  |  |
| B.7. [Contact hours](#2p2csry)  | **4** |  |
| B.8. [Credit hours](#147n2zr) | **4**  |  |
| B.9. [Justify differences if any](https://docs.google.com/document/d/1_zJQxH0uG2sCFqQvkRObkMbuBxxvUOcvfcJ0QnEhw0c/edit#bookmark=id.2xcytpi) | 3 weeks or equivalent (per the new RIDE regulations) of level 3 clinical preparation will be in addition to the 4 hours of contact time.Definition of Level 3 clinical preparation: - Practicum. At this higher level phase, teacher candidates hone their skills in teaching small groups and whole classes of students under the guidance, support, and supervision of highly skilled educators. They learn how to collect, assess, and use data to inform instruction, know state and national standards and how to align them with their teaching, and begin to develop a repertoire of effective teaching strategies. They observe and actively collaborate with their cooperating teacher. They participate in designing the environment for independence, where each person is a valued member of a community of learners. |
| B.10. [Grading system](#3o7alnk)  | **Letter grade |**  |  |
| B.11. [Instructional methods](#23ckvvd) | **| Lecture | Small group | Individual | Clinical Preparation**  |  |
| B.12.[Categories](#ihv636) | **Required for major; Required for Certification** |  |
| B.13. Is this an Honors course? | **NO** |  |
| B.14. [General Education](#32hioqz)N.B. Connections must include at least 50% Standard Classroom instruction. | **NO**  |  |
| B.15. [How will student performance be evaluated?](#1hmsyys) | **Attendance | Class participation | Field Observations | Presentations | Papers |** **Class Work | Projects | Teacher Candidate mini Work Sample: unit plan and RI-ICEE-aligned lessons** |  |

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| B.18**.** [**Course learning outcomes**](#lnxbz9)**: List each one in a separate row** | [**Professional Org.Standard(s)**](#35nkun2)**, if relevant** | [**How will each outcome be measured**](#1ksv4uv)**?** |
| Value and teach to the diverse mathematical interests, attitudes, and abilities of youth, especially emergent bilinguals. | FSEHD 2RIPTS 3, 4 | * Active class engagement: discussions, weekly blogs or journal posts
* Clinical preparation/lessons (using the \*\*RI-ICEE)
* Reflective notebook of all implemented lessons
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| Develop instructional strategies that utilize students’ interests, Mathematical Practices, and literacy practices, including digital literacies.  | FSEHD 3, 4RIPTS 3,4 | * Active class engagement: discussions,
* Clinical preparation/lessons (using the \*\*RI-ICEE)
* Reflective notebook of all implemented lessons
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| Analyze the strengths and weaknesses of various theoretical approaches to mathematics instruction to a diverse classroom. | FSEHD 2, 3RIPTS 6 | * Active class engagement: discussions, weekly blogs or journal posts
* Clinical preparation/lessons (using the \*\*RI-ICEE)
* Reflective notebook of all implemented lessons
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| Understand, articulate, and put into practice mathematics strategies that are research-based and meet NCTM and Common Core standards for mathematics instruction and the standards for mathematical practice. | FSEHD 4RIPTS 1, 11 | * Active class engagement: discussions, weekly blogs or journal posts
* Clinical preparation/lessons (using the \*\*RI-ICEE)
* Reflective notebook of all implemented lessons
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| Develop critical thinking practices as the means for analyzing the middle and high school mathematics curriculum including CCSSM, MP, high quality curriculum materials and school-based mathematics | FSEHD 1, 2, 4RIPTS 1,2,5,8,9 | Class explorations; mock lessons; written reflections; RI-ICEE-aligned lesson plans;  |
| Develop critical pedagogy techniques and practices for facilitating classroom engagement, interactions through manipulatives, dialogue and demonstrations, around a range of topics in the middle and high school curriculum. | FSEHD 1, 2, 4RIPTS 2,3, 4,5 9 | Mock lessons; RI-ICEE-aligned lesson plan |
| Design instruction to a diverse group of students that includes differentiation, scaffolding, and frontloading so that *all* students have opportunities to succeed | FSEHD 1, 2, 4RIPTS 2, 3, 4, 9 | * Active class engagement: discussions, weekly blogs or journal posts, mock lesson presentations with feedback from peers
* Clinical preparation/lessons (using the \*\*RI-ICEE)
* Reflective notebook of all implemented lessons.
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| Utilize math-specific, digital, STEM, assistive and general technology effectively in planning and implementation of lesson plans | FSEHD 1, 2, 4RIPTS 2, 4 | * Student-led facilitations and workshops; RI-ICEE lesson plan template and RI-ICEE evaluation tool;
* Clinical preparation/lessons (using the \*\*RI-ICEE)
* Reflective notebook of all implemented lessons.
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\* the RI-ICEE is the required observation instrument used throughout the FSEHD and based on Rhode Island Professional Teaching Standards (RIPTS).

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| B.19. [**Topical outline**](#44sinio)**: Do NOT insert whole syllabus, we just need a two-tier outline** |
| 1. **Inquiry-based curricula and pedagogies to promote mathematics for *all***
2. Critically examine high quality mathematics curricula content for each strand of the CCSS-Math and Standards for Mathematical Practice for use in the Middle and High Schools.
3. Explore what math content is taught and how to engage students in the schools in constructing mathematical knowledge as it relates to their lives.
4. Examine the mathematical content taught and where it fits in the progressions of the strands of mathematics.
5. Text selection and other curricular concerns
6. **Teaching and Learning Mathematics to Diverse Students**
7. What it means to take an inquiry-based, project-based critical thinking approach to pedagogy; how to operationalize research and theory in everyday practice.
8. Scaffolding and differentiating mathematics instruction
9. Examine and implement the use of technology for teaching, student exploration and making conjectures; the role of reasoning in the mathematics classroom using technology.
10. **Mathematical Discourse in the Mathematics classroom**
11. Dialogic pedagogical practices used to develop mathematical processes: reasoning, explaining and mathematical thinking.
12. Questioning strategies
13. Facilitating mathematical discourse
14. Designing small group and whole class activities
15. How culture is connected to the mathematics classroom and what this means for youth, families, and communities.
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##### D.1. Approvals:

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| Name | Position/affiliation | [Signature](#_41mghml) | Date |
| Lesley Bogad | Chair of Educational Studies |  |  |
| Julie Horwitz or Gerri August | FSEHD Deans |  |  |
| Earl Simson | FAS Dean |  |  |