

**Request for Establishing a New
M.S. in Secondary STEM Education (non-certification track)**

Degree History	2
Statement of Purpose	2
Date of Permanent Status: pending	4
Degrees Offered	4
Term when first students may enroll	4
Factors that identify student demand for the program	4
College and Department/School in which the program will reside	4
Admission	4
Admissions Requirements	4
Prior Degree Requirements	5
Application Deadlines	5
Special Competencies Needed	5
Admission Categories	5
Other Documents Required	5
University Statement	6
Academic Requirements	6
Degree Requirements	6
Course Requirements	6
Non-registered Requirements	7
Grade Minimums	7
Courses that Fulfill Degree Requirements	8
English Language Competency Minimums	8
Committees for Exams, Thesis, or Dissertations	8
Timetable and Definition of Satisfactory Progress	8
Assessment Plan	9
Financial Aid	9
Financial Awards	9
Departmental Operations	9
General Student Responsibilities	9
Student Government and Organizations	9
Travel for Professional Meetings	9

Degree History

A. Statement of Purpose

The M.S. in Secondary STEM Education without certification program will provide additional training to those already teaching middle and high school STEM subjects. It is a one-year master's program in which students will take some of the same courses as those in the program seeking institutional recommendation for certification in grades 7-12 in agriscience, biology, chemistry, earth science, integrated science, physics, physical science, mathematics, or technology education. Instead of completing a year-long student teaching residency, however, they will take an educational research course, an independent project course and select two other graduate-level courses in their content area or in the School of Education for a total of at least 30 credits.

Unlike current secondary education programs of study at any level, courses in this M.S. program integrate foundational education concepts and pedagogical skills with content area teaching through coursework tailored to the needs of secondary teachers in STEM fields. For example, issues of equity, diversity, access and inclusion will undergird all of the courses in this program rather than being covered in a single course. We anticipate this feature will allow for more integrated knowledge and skill development by teachers in this program.

Rationale for the Program

Currently, the University of Delaware does not offer a master's in education program except in specialized areas (<http://www.education.udel.edu/masters/>). As a result, there is not a path available for teachers who are already credentialed to teach their STEM subject areas with bachelor's degrees to advance their education at this institution. Wilmington University offers a 43-credit Masters in Education program in which students take the same courses as those seeking certification minus the student-teaching requirements. Delaware State University offers a 36-credit Master's in Educational Leadership. The Relay Graduate School offers a two-year Masters in Teaching with certification program.

The most compelling reason for wanting to pursue a master's degree is that it affords greater compensation. In Delaware and most states, teachers are paid according to a salary as dictated by state statute. This schedule stipulates that salaries be indexed across the state with increases earned annually based upon years of experience, along with graduate credits earned. Local districts typically provide salary supplements to the basic levels. Although the total salaries offered vary across the states, there is a consistent advantage of at least \$5,000 a year in salary with a master's degree.

A Sampling of Salaries Across the State

District	Entry Level Salary BA	Entry Level Salary MA	BA/5 Years	MA/5 Years	BA/ 10 Years	MA/10 Years
Appoquinimink	42,866	47,993	48,620	53,532	57,997	64,582
Christina	41,392	47,704	46,622	54,290	57,594	66,803
Colonial	40,731	46,916	45,803	53,243	56,450	65,425
New Castle	43,228	51,478	50,276	57,835	60,953	70,058
Red Clay	42,305	47,250	48,144	52,976	58,614	64,993
Smryna	42,794	49,374	46,837	53,050	53,515	61,894
Woodbridge	42,695	48,666	45,971	52,145	53,479	60,781

Further, there is some research to support the idea that graduate degree holders are significantly more effective in high school science. This research was conducted by the current Dean of the School of Education at the University of Delaware, Gary Henry, and his colleagues at the University of North Carolina, Chapel Hill. They were able to analyze results from state-mandated end-of-course tests disaggregated by teacher credentials. They pointed out that the importance of this finding is increased given the high concentration of alternative-entry teachers in math and science at the secondary level.¹

The degree will be offered through the Center for Secondary Education within the College of Arts and Sciences. All of the instructional, advising and general expenses of the program will be absorbed in its state-line budget. The Center for Secondary Teacher Education employs a director, an assistant director of STEM education, and field supervisors. The Director will be responsible for developing and scheduling courses, advising students, hiring instructors, providing scholarships and working with the office of Clinical Studies. The Director of Secondary Education reports to the Associate Dean of CAS, Dr. Suzanne Burton.

¹ Henry, G., Bastian, K.C., Fortner, C.K., Kershaw, D.C., Purtell, K.M., Thompson, C.L., & Zulli, R.A. (2014). Teacher preparation policies and their effects on student achievement. *Education Finance & Policy*, (9)3, 264-303.

B. Date of Permanent Status: pending**C. Degrees Offered**

Master of Science (M.S) in Secondary STEM Education, with institutional recommendation for initial secondary teacher certification in a STEM field (grades 7-12 in agriscience, biology, chemistry, earth science, integrated science, physics, physical science, mathematics, or technology education)

D. Term when first students may enroll

Summer 2021

E. Factors that identify student demand for the program

Upon completion of a master's degree program at a regionally accredited college or university, a Delaware educator may apply for movement to the master's degree column of the basic salary schedule for educators, set forth in 14 **Del.C.** §1305(a). (Typically adds at least \$5,000 a year)

According to IES, in AY 2017-18 just over 51% of secondary teachers in Delaware had master's degrees.²

F. College and Department/School in which the program will reside

College of Arts and Sciences administered through the Center for Secondary Education

I. Admission**A. Admissions Requirements**

1. A baccalaureate degree in a science, mathematics, or engineering field from an accredited college or university
2. An undergraduate cumulative grade index of 3.0 on a 4.0 scale, or demonstrate mastery of general knowledge, including the ability to read, write, and compute, by achieving a score deemed by the state of Delaware to be college ready on a test of general knowledge normed to the college-bound population.
3. A graduate cumulative grade index of at least 3.0 if graduate courses were taken.
4. Transcripts of all previous academic work at the undergraduate and graduate (if applicable) level. Applicants may upload unofficial copies of their transcripts and if admitted, all transcripts will be verified by the Office of Graduate and Professional Education. Applicants who previously attended the University of Delaware still need to upload an unofficial transcript, but *do not* need to provide official transcripts for verification.
5. GRE scores are not required. For students whose native language is not English, an officially reported TOEFL test score of at least 600 (paper-based) or 100 (Internet-based). IELTS scores are also accepted. The minimum score is 7.0.

² U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS). (2018-18). "Public School Teacher Data File" and "Private School Teacher Data File," 1999-2000, 2003-04, 2007-08, and 2011-12; SASS, "Charter School Teacher Data File," 1999-2000; and National Teacher and Principal Survey (NTPS), "Public School Teacher Data File" and "Private School Teacher File,"

6. It is a Delaware State Board of Health Regulation and a University of Delaware mandate that all entering graduate students born after January 1, 1957 give proof of proper immunization for measles, mumps, and rubella. If TB immunization requirements are not met, the student will not be eligible to register. Specific information may be obtained from the Student Health Service (302) 831-2226.

Admissions decisions are made by the Secondary STEM Education graduate committee composed of the Director of Secondary Education, Assistant Director of STEM Education, Associate Dean in the College of Arts and Sciences, and/or associated program faculty. Students will be admitted to the program based on program capacity, the applicant's qualifications, and the applicant fit with program goals and objectives.

B. Prior Degree Requirements

A baccalaureate degree in a science, mathematics, engineering or computer science field from an accredited college or university or current enrollment in a UD science, mathematics, engineering or computer science baccalaureate degree program

C. Application Deadlines

The application deadline is February 15 for priority consideration with rolling admissions until the first day of the summer semester in which the student intends to enroll

D. Special Competencies Needed

Fluency in verbal and written English is required. For students whose native language is not English, an officially reported TOEFL test score of at least 600 (paper-based) or 100 (Internet-based). IELTS scores are also accepted. The minimum score is 7.0.

E. Admission Categories

Regular

F. Other Documents Required

1. Three letters of recommendation from professors or supervisors.
2. A resume detailing the candidate's academic, professional, and/or volunteer experience.
3. Responses to the following two graduate application essays:
 - a. *Essay 1*
Outline your educational plans and career goals and discuss how your proposed plan of graduate study relates to them. Some areas of discussion might include: Specific attributes of the program at UD that lead you to believe that this degree is appropriate to help you achieve your professional goals.
 - b. *Essay 2*
The applicant should address one of the following questions in a brief essay of 500 words or less:
 - Select an important problem facing students who are learning science, mathematics, engineering, or computer science, their teachers, or other people who work with them and propose a solution to this problem; or,

- Describe an experience in your own life that influenced your decision to become a K-12 teacher in a STEM field.
4. Interview – each applicant will be expected to participate in an interview with one or more secondary STEM education faculty and staff. The purpose of this interview is to determine each applicants' suitability to the purpose and goals of the program.

G. University Statement

Admission to the graduate program is competitive. Those who meet stated requirements are not guaranteed admission, nor are those who fail to meet all of those requirements necessarily precluded from admission if they offer other appropriate strengths.

II. Academic Requirements

A. Degree Requirements

1. Course Requirements

Table 1 below outlines the required courses for this program.

Table 1. List of courses required for completion of the M.S. in Secondary STEM Education

Current Required Coursework for Certification		
Course	CH	Offered
SMED600 Issues in STEM Education (adolescent development, diversity, equity and inclusion issues in STEM, learning theory, science and math standards)	3	Online, self-paced (Anytime and competency based)
SMED601 Inclusive STEM Classroom Management (PBIS framework, SEL strategies)	3	Online, self-paced (Anytime and competency based)
SMED602 Inclusive STEM Assessment (culturally competent/reliable & valid formative & summative)	4	Summer 1 (F2F or hybrid, 48 class hours)
SMED603 Inclusive STEM Instruction (backwards design lesson and unit planning, Universal Design for Learning framework, cultural competence)	4	Summer 2 (F2F or hybrid, 48 class hours)
SMED688 Independent Study Project (NO SYLLABUS)	5	Online, self-paced (Anytime)
EDUC828, EDUC850, or EDUC852	3	Another educational research course may be substituted

Graduate Electives	8	any courses 600-level or above in student's discipline (e.g., biology) or in education
Total		30+ credits to be completed

2. Non-registered Requirements

- a. Students in this non-certification track will complete an independent project
- b. Procedures for Petition to Vary Degree Requirements must be submitted to the Director of Secondary Teacher Education.

Core Course Substitution

Students are expected to complete all core courses in the degree program. On rare occasions, extenuating circumstances may warrant a course substitution. On those occasions, students may write a petition to the Secondary STEM Education Graduate Committee. The petition should describe the extenuating circumstances that warrant the request and explain the benefits that accrue to the students' scholarly development. The Secondary STEM Education Graduate Committee must approve the petition.

Transfer of Credit from Another Institution

Graduate credit earned at another institution will be evaluated at the written request of the student following UD's Graduate College policy on Transfer Credit. Such a request should be submitted first to the Assistant Director of STEM Education using a Request for Transfer of Graduate Credit form. A maximum of 9 credits required for the degree will be accepted provided that such credits (1) were earned with a grade of no less than B, (2) are approved by the Assistant Director of STEM Education and the College of Arts and Sciences or Designee, (3) are in accord with the student's program requirements, (4) are not older than five years, (5) are graduate courses, and (6) were completed at an accredited college or university. The credits, but not the grades or quality points, are transferable to University of Delaware graduate records. Graduate courses counted toward a degree received elsewhere may not be used. Credits earned at another institution while the student was classified as a continuing education student at that institution are not eligible to be transferred to one's graduate degree at the University of Delaware. Credits from institutions outside of the United States are generally not transferable to the University of Delaware.

3. Grade Minimums

Students must have a minimum overall cumulative grade point average of 3.0 to be eligible for the degree. In addition, the grades in courses applied toward the degree program must equal at least 3.0. All graduate-numbered courses taken with graduate student classification at the University of Delaware are applied to the cumulative index. Credit hours and courses for which the grade is below "C-" do not count toward the degree even though the grade is applied to the overall index.

4. Courses that Fulfill Degree Requirements

See section A.1. above for a list of courses that fulfill degree requirements.

5. English Language Competency Minimums

For students whose native language is not English, an officially reported TOEFL test score of at least 600 (paper-based) or 100 (Internet-based). IELTS score of at least 7.0.

B. Committees for Exams, Thesis, or Dissertations

This graduate program **does not require a thesis or dissertation.**

1. Initial procedure for advisor and advisement procedures: **N/A**
2. Student committee needed and procedures for selecting committee members: **N/A**
3. Deadlines for establishing and preparation requirements for comprehensive examinations: **N/A**
4. Policies for dates of examinations, grading of committee examinations and retake options: **N/A**
5. Guidelines for approving research proposals involving human or animal subjects: **N/A**
6. Procedures for thesis/dissertation approval in the department (e.g., role of department chair, dean, etc.): **N/A**
7. Departmental and student obligations for finding committee members: **N/A**
8. Departmental and student obligations and procedures for changes in committee members: **N/A**

C. Timetable and Definition of Satisfactory Progress

1. **Academic Expectations:** A student must be classified as full-time to be eligible for a scholarship or teacher residency stipend. Students holding a tuition scholarship or teacher residency stipend must register for at least 6 credit hours of graduate-level courses each fall and spring semester to meet full-time status. Normal progress in the degree program is five consecutive semesters of 6 credit hours each, beginning in the summer of admission year. Students will be expected to submit a progress report to the Center for Secondary Education annually beginning with the first full year after admission until their program is complete. The Director of Secondary Education, or designated representative, will review each student's progress and provide them with feedback or advisement as needed.
2. **Grade Requirements:** Students must have a minimum overall cumulative grade point average of 3.0 to be eligible for the degree. Grades in courses applied toward the degree program must be a letter grade of C or better. Failure to achieve grade minimums in the course(s) will require the student to re-enroll in the course(s) in subsequent semesters.
3. **Thesis/dissertation progress timetable guidelines:** N/A
4. **Thesis/dissertation defense guidelines:** N/A
5. **Forms required:** N/A
6. **Consequences for failure to make satisfactory progress:** The University time limit is ten consecutive semesters to complete the degree requirements for students entering a master's degree program beginning with the date of matriculation. This program follows the same policies as the Graduate College

for satisfactory progress, degree time limits, and student dismissal from the program: <https://grad.udel.edu/policies/graduate-academic-policies/#time-limits>

7. **Protocol for grievance procedure if student has been recommended for termination for failure to make satisfactory progress:** Requests for time extensions for degree completion must be made in writing and approved by the Director of Secondary Education. The Director will forward the request to the Graduate College. The Director reserves the right to an in-person meeting with the student to discuss a progress plan for degree completion. The Graduate College will determine the student's eligibility for a time extension and will notify the student in writing of its decision to grant an extension of time. This program follows the same policies as the Graduate College for satisfactory progress, degree time limits, and student dismissal from the program: <https://grad.udel.edu/policies/graduate-academic-policies/#time-limits>

III. Assessment Plan

The Director for The Center for Secondary Teacher Education will work with the Assistant STEM Education Director, and Delaware Center for Teacher Education to ensure program assessment according to the accrediting body's (CAEP) Advanced Program Standards. (See attachment for details).

IV. Financial Aid

A. Financial Awards

1. Types of Awards and Duration: **N/A**
2. Responsibilities of Students on Contract: **N/A**
3. Evaluation of Students on Contract – CAEP accreditation metrics – course outcomes, etc.

V. Departmental Operations

A. General Student Responsibilities

1. Up-to-date addresses, etc.
2. Laboratories and research equipment: **N/A**
3. Hazardous Chemical Information Act: **N/A**
4. Vehicles: **N/A**
5. Keys, offices, mail, telephone, copy machine, computer terminals: **N/A**

B. Student Government and Organizations

Secondary Educators of Tomorrow (SET)

C. Travel for Professional Meetings

Not provided