

# TEACHING, MASTER OF (M.T.) WITH A CONCENTRATION IN PHYSICS EDUCATION

## Program goal

The Master of Teaching curricula are designed to incorporate eligibility for initial teaching licensure in Virginia in early and elementary, or secondary education (biology, chemistry, earth science, English, history, history and social studies, mathematics or physics).

The approved curricula include undergraduate qualifying courses as well. Individuals pursuing the extended program are awarded undergraduate and graduate degrees simultaneously; baccalaureate degree recipients who meet the admission criteria also may pursue the Master of Teaching degree program, including the qualifying courses. The combined baccalaureate and Master of Teaching program requires a minimum of 153-154 hours, at least 33 of which must be at the graduate level.

## Secondary education

The Master of Teaching program includes curricula that lead to endorsement in one of the following disciplines: biology, chemistry, drama, earth science, English, history/social studies, mathematics or physics.

In order to enroll in the program, students must apply and be accepted to both the Extended Teacher Preparation Program and the Graduate School. Admission information for the Extended Teacher Preparation Program (<http://bulletin.vcu.edu/graduate/school-education/extended-teacher-preparation-program/>) is available in this bulletin.

## Student teaching requirements

All students pursuing a secondary education endorsement within the Master of Teaching program will student teach in the spring semester. To do so, students must take and pass the Virginia Communication and Literacy Assessment and their subject-specific Praxis II exams before the fall semester of the academic year in which they will student teach.

## Student learning outcomes

### Science education

1. Demonstrate content knowledge in science: Candidates demonstrate content knowledge in science as evidenced by the Praxis II scores.
2. Demonstrate conceptual content knowledge: Candidates demonstrate knowledge of the conceptual science to be taught and related fields, and that they are well-prepared in the breadth of knowledge needed to teach in their fields of licensure as evidenced by GPA in major courses.
3. Effectively plan classroom-based instruction: Candidates demonstrate the ability to plan effective classroom-based instruction and design assessments, consistent with goals of the National Science Education Standards as evidenced by the unit plan assessment.
4. Effectively apply knowledge, skills and dispositions during student teaching: Candidates demonstrate knowledge, skills and dispositions are applied effectively in practice as evidenced by the clinical evaluation.
5. Demonstrate effects on student learning: Candidates demonstrate positive effects on student learning of major concepts, principles,

theories, laws; the unifying concepts of science; the nature of science; the practice of inquiry (including student engagement in inquiry); analysis of issues related to science and technology; and the impact of science on themselves and their community as evidenced by the assessing student learning portion of the clinical evaluation.

6. Preparation for legal, ethical and safety issues: Candidates demonstrate preparation in legal issues, safety and ethical treatment of living things as evidenced by the safety module assessment.
7. Knowledge of research and investigation in science: Candidates demonstrate knowledge of research and investigation in science and understand multiple forms of scientific inquiry; can design, conduct and report research in their field; and can use mathematics and appropriate technology to collect, process and explain data as evidenced by the student-generated research assessment.
8. Knowledge of the contextual content of science: Candidates demonstrate knowledge of the contextual content of science and have a strong understanding of the socially relevant issues, social context, history, philosophy and applications of science as evidenced by the nature of science reflection assignment.

## VCU Graduate Bulletin, VCU Graduate School and general academic policies and regulations for all graduate students in all graduate programs

The VCU Graduate Bulletin website documents the official admission and academic rules and regulations that govern graduate education for all graduate programs at the university. These policies are established by the graduate faculty of the university through their elected representatives to the University Graduate Council.

It is the responsibility of all graduate students, both on- and off-campus, to be familiar with the VCU Graduate Bulletin as well as the Graduate School website (<http://www.graduate.vcu.edu/>) and academic regulations in individual school and department publications and on program websites. However, in all cases, the official policies and procedures of the University Graduate Council, as published on the VCU Graduate Bulletin and Graduate School websites, take precedence over individual program policies and guidelines.

Visit the **academic regulations section** for additional information on academic regulations for graduate students. (<http://bulletin.vcu.edu/academic-regs/>)

## Degree candidacy requirements

A graduate student admitted to a program or concentration requiring a final research project, work of art, thesis or dissertation, must qualify for continuing master's or doctoral status according to the degree candidacy requirements of the student's graduate program. Admission to degree candidacy, if applicable, is a formal statement by the graduate student's faculty regarding the student's academic achievements and the student's readiness to proceed to the final research phase of the degree program.

Graduate students and program directors should refer to the following degree candidacy policy as published in the VCU Graduate Bulletin for complete information and instructions.

Visit the **academic regulations section** for additional information on degree candidacy requirements. (<http://bulletin.vcu.edu/academic-regs/grad/candidacy/>)

## Graduation requirements

As graduate students approach the end of their academic programs and the final semester of matriculation, they must make formal application to graduate. No degrees will be conferred until the application to graduate has been finalized.

Graduate students and program directors should refer to the following graduation requirements as published in the Graduate Bulletin for a complete list of instructions and a graduation checklist.

Visit the **academic regulations section** for additional information on graduation requirements. (<http://bulletin.vcu.edu/academic-regs/grad/graduation-info/>)

Apply online at [graduate.admissions.vcu.edu](http://graduate.admissions.vcu.edu) (<http://www.graduate.admissions.vcu.edu>).

## Admission requirements

| Degree: | Semester(s) of entry: | Deadline dates: | Test requirements: |
|---------|-----------------------|-----------------|--------------------|
| M.T.    | Fall                  | Feb 1           | GRE or MAT         |
|         | Spring                | Oct 1           |                    |
|         | Summer                | Feb 1           |                    |

In addition to the general admission requirements of the VCU Graduate School (<http://bulletin.vcu.edu/graduate/study/admission-graduate-study/admission-requirements/>), the following requirements represent the minimum acceptable standards for admission:

1. Bachelor's degree with a major, or equivalent, in the subject the student wishes to teach (for secondary) or an appropriate liberal arts major (for early/elementary) (Students in the five-year extended program must be pursuing an appropriate bachelor's degree.)
2. Three letters of recommendation addressing the student's potential for graduate study in education
3. Student's written statement concerning career interests
4. Transcripts of all previous college work
5. Satisfactory scores on the GRE or MAT

Additionally, there are several tests that students must pass for admission to teacher preparation, admission to student teaching and licensure in Virginia. Students should consult the Student Services Center (<http://www.soe.vcu.edu/student-services-center/>) section on the School of Education website for current testing requirements.

Admission to clinical experiences in schools requires a background check and fingerprinting.

## Degree requirements

In addition to general VCU Graduate School graduation requirements (<http://bulletin.vcu.edu/academic-regs/grad/graduation-info/>), students are required to complete course work in core and elective courses.

1. Credit hour requirements: Students are required to complete a minimum of 33-34 credit hours depending on concentration.
2. Grade requirements: Receipt of a grade of C or below in two courses constitutes automatic dismissal from the program. Courses with a grade below C cannot be used to satisfy degree requirements.

3. Student teaching requirements: Students must successfully complete approved student teaching experience. Note: Students must complete all undergraduate courses before student teaching.
4. Additional testing requirement: Students must pass Praxis II, where applicable, for licensure.

## Curriculum requirements

### Undergraduate courses

| Course  | Title   | Hours |
|---|---|-------|
| <b>Qualifying courses</b>   |   |       |
| EDUS 301  | Human Development and Learning  | 3     |
| Major courses (as undergraduate science majors) including genetics/molecular biology, botany, zoology, anatomy/human physiology, ecology, two physics and one earth science |   |       |
| Admission to teacher preparation is a prerequisite for the following courses:   |   |       |
| TEDU 311  | Middle School Practicum (secondary; must be taken concurrently with TEDU 537) | 2     |
| TEDU 312  | High School Practicum (science; must be taken concurrently with TEDU 540)     | 1     |
| TEDU 510  | Instructional Technology in PK-12 Environments                                | 2     |

### Graduate courses

| Course                                   | Title   | Hours |
|--|---|-------|
| <b>Required courses</b>                  |   |       |
| TEDU 537                                 | Secondary School Curriculum   | 3     |
| TEDU 540                                 | Teaching Middle and High School Sciences (fall only)  | 3     |
| EDUS 617/PSYC 657                        | Advanced Educational Psychology for Secondary Teachers  | 3     |
| EDUS 673                                 | Democracy, Equity and Ethics in Education   | 3     |
| TEDU 562                                 | Reading Instruction in the Content Areas  | 3     |
| TEDU 588                                 | Classroom Management  | 3     |
| <b>Elective</b>                          |   |       |
| Select one of the following:             |   |       |
| EDUS 610                                 | Social Foundations of Education   | 3     |
| SEDP 505                                 | Theory and Practice of Educating Individuals with Special Needs                               |       |
| SEDP 619                                 | Multicultural Perspectives in Education   | 3     |
| TEDU 531                                 | Media Literacy in the K-12 Classroom  |       |
| TEDU 651                                 | Special Topics in Education (selected sections)   |       |
| <b>Clinical experience (spring only)</b> |   |       |
| TEDU 672                                 | Internship  | 4     |
| TEDU 674                                 | Internship II   | 5     |
| TEDU 681                                 | Investigations and Trends in Teaching (must be taken concurrently with TEDU 672 and TEDU 674) | 3     |
| Total Hours                              |   | 33    |

The minimum total of graduate credit hours required for this degree is 33.

## Other curricular options

Students who already possess a content major in a discipline appropriate for secondary education may pursue a post-baccalaureate certificate.

### Program contact

Communications and Enrollment Management

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**Program website:** [soe.vcu.edu/academics/masters-programs/master-of-teaching](https://soe.vcu.edu/academics/masters-programs/master-of-teaching/) (<https://soe.vcu.edu/academics/masters-programs/master-of-teaching/>)