

The Master of Science degree (non-thesis option) requires 30 credits of coursework. Students pursuing the degree may double count up to six credits which were used in fulfilling the requirements of their undergraduate degree, towards their graduate program. One additional 400-level course may be counted toward the graduate degree, if the course is not counted towards the undergraduate degree. All courses must have been passed with a "B-" or better. For all three specialty areas - Science Teaching, Mathematics Teaching, and Computer Science Teaching - the curriculum structure consists of (i) a set of required courses, (ii) a pair of discipline specific pedagogy courses, and (iii) general elective courses that serve to supplement the student's technical interests.

### **SPECIALTY IN SCIENCE TEACHING**

**Required (18 credits):**

<b>SCED562</b>	K-12 FIELD EXPERIENCE AND BUILDING STUDENT RELATIONSHIPS	3.0
<b>SCED533</b>	EDUCATION PSYCHOLOGY AND ASSESSMENT*	3.0
<b>SCED563</b>	DYNAMIC TEACHING: MOTIVATION, CLASSROOM MANAGEMENT, AND DIFFERENTIATION OF INSTRUCTION	3.0
<b>SCED564</b>	CAPSTONE CURRICULUM DESIGN I	3.0
<b>SCED565</b>	CAPSTONE CURRICULUM DESIGN II	6.0

#### **Discipline specific pedagogy courses**

**(6 credits):**

<b>SCED515</b>	SCIENTIFIC PRACTICES VS ENGINEERING DESIGN AND THE NATURE OF SCIENTIFIC KNOWLEDGE*	3.0
<b>SCED545</b>	PHYSICS AND CHEMISTRY TEACHING TECHNIQUES	3.0

\*SCED533, SCED563, and SCED515 are approved to count as H&SS Restricted Electives.

Finally, the remaining six credits come from general elective courses that may be taken in other departments on campus to satisfy this requirement.

### **SPECIALTY IN MATHEMATICS TEACHING**

**Required (18 credits):**

<b>SCED562</b>	K-12 FIELD EXPERIENCE AND BUILDING STUDENT RELATIONSHIPS	3.0
----------------	--	-----

<b>SCED533</b>	EDUCATIONAL PSYCHOLOGY AND ASSESSMENT*	3.0
<b>SCED563</b>	DYNAMIC TEACHING: MOTIVATION, CLASSROOM MANAGEMENT, AND DIFFERENTIATION OF INSTRUCTION*	3.0
<b>SCED564</b>	CAPSTONE CURRICULUM DESIGN I	3.0
<b>SCED565</b>	CAPSTONE CURRICULUM DESIGN II	6.0

**Discipline specific pedagogy courses**

**(6 credits):**

<b>MAED505</b>	MATHEMATICAL PRACTICES AND THE SOCIAL CONTEXT OF MATHEMATICS	3.0
<b>MAED525</b>	PRE-ALGEBRA AND ALGEBRA TEACHING TECHNIQUES	3.0

\*SCED533, and SCED563 are approved to count as H&SS Restricted Electives.

Finally, the remaining six credits come from general elective courses that may be taken in other departments on campus to satisfy this requirement.

**SPECIALITY IN COMPUTER SCIENCE TEACHING**

**Required (18 credits):**

<b>SCED562</b>	K-12 FIELD EXPERIENCE AND BUILDING STUDENT RELATIONSHIPS	3.0
<b>SCED533</b>	EDUCATION PSYCHOLOGY AND ASSESSMENT*	3.0
<b>SCED563</b>	DYNAMIC TEACHING: MOTIVATION, CLASSROOM MANAGEMENT, AND DIFFERENTIATION OF INSTRUCTION*	3.0
<b>SCED564</b>	CAPSTONE CURRICULUM DESIGN I	3.0
<b>SCED565</b>	CAPSTONE CURRICULUM DESIGN II	6.0

**Discipline specific pedagogy courses**

**(6 credits):**

<b>MAED505</b>	MATHEMATICAL PRACTICES AND THE SOCIAL CONTEXT OF MATHEMATICS	3.0
----------------	--	-----

OR		
<b>SCED515</b>	SCIENTIFIC PRACTICES VS ENGINEERING DESIGN AND THE NATURE OF SCIENTIFIC KNOWLEDGE	3.0
<b>MAED535</b>	COMPUTER SCIENCE TEACHING TECHNIQUES	3.0

\* SCED533, SCED563, and SCED515 are approved to count as H&SS Restricted Electives.

Finally, the remaining six credits come from general elective courses that may be taken in other departments on campus to satisfy this requirement.

### **Mines Combined Undergraduate / Graduate Degree Program**

Teach@Mines offers a combined Bachelor of Science/Master of Science program that enables students to work on a Bachelor of Science in any department at Mines and a Master of Science in any of the three teaching specialty areas simultaneously. Students take 30 credits of coursework at the graduate level in addition to the undergraduate requirements, and work on both degrees at the same time. As described above, a total of nine credits of 400-level coursework may be counted toward the graduate degree. Students pursuing the Master of Science degree may choose up to six credits (400- or 500-level) to "double-count"; that is, apply towards both their Bachelor of Science degree requirements and their Master of Science degree requirements simultaneously. All courses must have been passed with a "B-" or better. Interested students must apply for the combined program before they complete their undergraduate degree program.