Mathematics and Science Concentration

Learn more about the Bachelor of Science in Education in Middle Grades Education (https://www.temple.edu/academics/degree-programs/middle-grades-education-major-ed-mgre-bsed).

The Bachelor of Science in Education in Middle Grades Education prepares undergraduate students for middle level teaching (fourth to eighth grades). Middle grades teachers, particularly in math and science education, are increasingly sought out and in high-demand in Pennsylvania as well as across the country.

The College of Education program in Middle Grades Education is designed to ensure not only that there are certified teachers to fill the growing vacancies, but that our students graduate highly knowledgeable about learning and teaching as well as committed to pre/adolescent learners from diverse ethnic, economic and geographic backgrounds. To that end, our program focuses on building deep content-specific pedagogical knowledge aligned to the breadth of academic standards and the wide-ranging developmental needs of middle grades students. To develop a strong link between learning theories and actual pedagogical practice, we also require that our students engage in early, often and strategic field/clinical education experiences in middle grades settings.

Our program stands out as cutting-edge because we prepare undergraduate students to teach in both the upper elementary and middle grades classrooms.

In addition to becoming certified to teach all elementary subjects in 4-6th, all Middle Grades Education: Mathematics and Science Concentration students will pursue dual certification for 7-8th grades in the areas of math and science; required number of credit hours is 127 credits for this concentration.

GPA Requirements:

- In order to maintain good standing in Middle Grades Education, students must maintain a 3.0 cumulative grade point average and a 2.0 grade point average in the course work in their concentration areas.

Summary of Requirements

University Requirements

All students are required to complete the university’s General Education (GenEd (http://bulletin.temple.edu/undergraduate/general-education)) curriculum.

All students must take a minimum of two writing-intensive (WI) courses at Temple University. Writing intensive course numbers end in 96, 97 and 98.

College Requirements

Students receive a Bachelor of Science in Education degree with a recommendation for Pennsylvania teacher certification upon the successful completion of their program requirements with a minimum cumulative GPA of 3.0 or must meet the Pennsylvania Department of Education’s qualifying Praxis score standards.

The required total minimum credit hours for the Middle Grades Education concentration in Mathematics and Science is 127. These credit hours are satisfied by taking courses in four categories:

1. University General Education requirements (General Education)
2. Education courses
3. Teacher Education Certification Courses (i.e. methods and student teaching)
4. Concentration courses

All students seeking to graduate with the recommendation for Instructional I Certification from Pennsylvania must also meet the requirements for Candidacy.

Suggested Academic Plan

B.S.ED. in Middle Grades Education: Mathematics and Science Concentration

Requirements for New Students starting in the 2018-2019 Academic Year

To best prepare students in this major for the Praxis II exams, we strongly encourage taking the suggested GenEds listed.

(Certain courses require that a student secure clearances as per the College of Education policy; students should check the current list of courses that require clearances on the College of Education web site (https://education.temple.edu/ofp/clearances).)
### Year 1

#### Fall

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 0802, 0812, or 0902</td>
<td>Analytical Reading and Writing [GW]¹</td>
<td>4</td>
</tr>
<tr>
<td>GenEd Breadth Course (Race &amp; Diversity)²</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>BIOL 1011</td>
<td>General Biology I (includes a lab)³</td>
<td>4</td>
</tr>
<tr>
<td>MATH 1022</td>
<td>Precalculus¹</td>
<td>4</td>
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</tbody>
</table>

**Term Credit Hours** 15

#### Spring

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IH 0851 or 0951</td>
<td>Intellectual Heritage I: The Good Life [GY]¹</td>
<td>3</td>
</tr>
<tr>
<td>GenEd Breadth Course (U.S. Society)⁴</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>GenEd Breadth Course (Arts)</td>
<td></td>
<td>3-4</td>
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</table>

Select one of the following:

- PHYS 1004 Introduction to Astronomy
- EES 1001 Introductory Geology
- MATH 1041 Calculus I¹⁵

**Term Credit Hours** 15

### Year 2

#### Fall

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IH 0852 or 0952</td>
<td>Intellectual Heritage II: The Common Good [GZ]</td>
<td>3</td>
</tr>
<tr>
<td>GenEd Breadth Course (Global/World Society)⁶</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>MATH 1042</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 1021</td>
<td>Introduction to Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 1023</td>
<td>Introduction to Chemistry Laboratory I</td>
<td>1</td>
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<tr>
<td>EDUC 2103</td>
<td>Socio-cultural Foundations of Education in the United States¹</td>
<td>3</td>
</tr>
</tbody>
</table>

**Term Credit Hours** 17

#### Spring

Select one of the following:

- ENG 2501 Introduction to British Writing
- ENG 2502 Introduction to American Writing
- ENG 2503 Introduction to Global Writing

Select one of the following:

- MATH 1013 Elements of Statistics
- MATH 2031 Probability and Statistics
- MATH 2021 Functions and Modeling
- CHEM 1022 Introduction to Chemistry II
- CHEM 1024 Introduction to Chemistry Laboratory II
- EDUC 2109 Adolescent Development for Educators¹⁷
- SPED 2231 Introduction to Inclusive Education¹⁷

**Term Credit Hours** 16

### Year 3

#### Fall

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 1021</td>
<td>Introduction to General Physics I</td>
<td>4</td>
</tr>
<tr>
<td>MGRE 3109</td>
<td>Cognitive Development in the Content Areas (FALL ONLY)¹</td>
<td>3</td>
</tr>
<tr>
<td>MGRE 3111</td>
<td>Applications of Learning Theory to Middle Grades Education (FALL ONLY)¹</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

- HIST 1101 U.S. History to 1877
- HIST 1102 U.S. History since 1877
- MATH 1015 Introduction to Numbers Figures

**Term Credit Hours** 17

#### Spring

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 1012</td>
<td>General Biology II³</td>
<td>4</td>
</tr>
<tr>
<td>MGRE 3145</td>
<td>Teaching and Learning Math in the Middle Grades (SPRING ONLY)</td>
<td>3</td>
</tr>
</tbody>
</table>
Year 4

Spring
MGRE 4888  Student Teaching in the Middle Grades  9
MGRE 4801  Senior Seminar and Performance Assessment in Middle Grades Education  3
EDUC 4111  Classroom and Conflict Management in Grades 4 through 12  3

Total Credit Hours:  15

Course must be successfully completed to be eligible for Candidacy approval.

1  Suggested GenEd Race & Diversity courses: AAAS 0829, POLS 0829, ANTH 0829, SOC 0829, GUS 0829 or HIST 0829.
2  These two courses constitute the waiver for the GenEd Science and Technology category if the courses are completed with a C- or better.
3  Suggested GenEd U.S. Society courses: ANTH 0848, HIST 0848, AMST 0848 or GUS 0848.
4  This course constitutes the waiver for the GenEd Quantitative Literacy category if the course is completed with a C- or better.
5  Suggested GenEd Global/World Society courses: ANTH 0867, GUS 0867 or SOC 0867.
6  These three courses constitute the waiver for the GenEd Human Behavior category if the courses are completed with a C- or better.