In the 21st century, scientific and technological innovations have become increasingly important as we face the benefits and challenges of both globalization and a knowledge-based economy. To succeed in this new information-based and highly technological society, students need to develop their capabilities in STEM to levels much beyond what was considered acceptable in the past.

—NATIONAL SCIENCE FOUNDATION

## STEM Certificate Program

### GOALS OF THE PROGRAM

1. To expose students to a variety of STEM fields and demonstrate the inter-relatedness of science, technology, engineering, and math.

2. To gain functional knowledge in all areas of STEM and sustain interest in future STEM-based pursuits.

3. To gain fluency in a computer science language in order to learn different problem solving algorithms and to improve analytical thinking and problem solving.

4. To promote STEM related literacy, whether or not they pursue STEM-related fields in the future.

5. To develop creativity and design thinking skills.

6. Students who successfully complete the established requirements will earn the designation of STEM scholar and a special STEM certificate at graduation.

### REQUIREMENTS

Students must earn at least 500 points to receive the certificate at graduation. Enrolling in classes, participating in clubs and activities related to STEM-based initiatives, attending outside field-related seminars all count toward this goal.

Among the points earned for completing certain elective activities, there are two required elements: reading a STEM related book during the summer and then attending a seminar in the fall to discuss the reading, and writing a one page reflection on the book; and the completion of a capstone research project during senior year.

In addition to graduation requirements, students must complete the following with a minimum grade of a B:

- Introduction to Computer Programming
- Advanced and/or AP Computer Science
- Two of the following:
  - AP Chemistry
  - AP Physics
  - AP Biology
- AP Calculus AB

Technology is pervasive in almost every aspect of daily life, and as the workplace changes, STEM knowledge and skills grow in importance for all workers, not just mathematicians and scientists.

### Projected Percentage Increases in STEM Jobs: 2010–2020

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Percentage Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Occupations</td>
<td>14%</td>
</tr>
<tr>
<td>Math</td>
<td>16%</td>
</tr>
<tr>
<td>Computer Systems Analysts</td>
<td>22%</td>
</tr>
<tr>
<td>System Software Developers</td>
<td>32%</td>
</tr>
<tr>
<td>Medical Scientists</td>
<td>36%</td>
</tr>
<tr>
<td>Biomedical Engineers</td>
<td>62%</td>
</tr>
</tbody>
</table>

Source: http://www.ed.gov/STEM

For more information on the program and participation requirements, email Jennifer Landry (jlandry@northcross.org) or Amy Bagliani (abagliani@northcross.org).