

Martin Luther STEM Certificate Requirements

Math Requirements

- 4 years of Math with an 80 or higher in each course.
- Pass 3 math Regents Exams in:
 - Algebra 1
 - Geometry
 - Algebra 2 (in 2015-2016 students may pass *either* the Common Core Algebra 2 Exam or the older Algebra 2 / Trig Exam)

Science Requirements

- 4 years of Science with an 80 or higher in each course.
- Pass 2 Science Regents Exams among:
 - Living Environment
 - Earth Science
 - Physics
 - Chemistry

Technology Requirements

- Complete the Technology course with grade of an 80 or higher.
- Complete 2 of the following
 - Photography Course
 - Robotics Course
 - A web-page demonstrating basic HTML/CSS proficiency
 - Support Theater Tech for 1 major production
 - Support technology for school functions or a school organization for 1 year.
 - Other (must be pre-approved)

Engineering Requirements

- 1) Investigate 2 different fields of engineering through site visit, office visit, etc. with actual engineers in those fields.
 - (A) Compare and contrast in writing how engineers in different fields carry out engineering processes.
 - Define the word *engineering* and describe the general design process engineers use (e.g., define a problem, specify requirements, consider resources, brainstorm and evaluate possible solutions, develop and prototype a solution, test, repeat as needed, communicate results) in terms of a product used in everyday life.
- 2) Do 1 engineering project (pre-approved)—either small individual projects and/or larger team projects.

Advanced Coursework

- Take and earn a grade of 80 in 2 of the following
 - Elements of Chemistry
 - Earth History
 - Heredity and Society
 - Conservation and Pollution Biology
 - AP Calculus
 - Intro to Probability and Statistics
 - Any science, math, or technology course *with* an associated AP Exam and a 3 or higher on that exam.
 - Take one SAT-II in either Math or Science (either Level I or II)

Major Events

- 1) Visit a STEM related fair/exhibit/conference. (Information must be reported to advisor.)
- 2) Work with a professional in a STEM field of interest as part of the Alumni Mentoring Program
- 3) Complete a major (pre-approved) STEM project OR internship in any STEM area:
 - science
 - technology (including software)
 - engineering
 - math

Leadership

Demonstrate leadership in a STEM-related area; must be pre-approved. Examples include, but are not limited to the following:

- lead a STEM-related club
- design the technology for a theater event
- recruit other students
- mentor other students in STEM areas
- plan and lead a trip to a museum or other site of STEM-related interest.

Note: Activities marked as needing pre-approval must be cleared by students through the STEM coordinator (who may consult other faculty).