

“STEM” DIPLOMA ENDORSEMENT

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Senate Bill 344 (H-2) as reported from House committee

Sponsor: Sen. John Proos

House Committee: Workforce and Talent Development

Senate Committee: Education

Complete to 6-1-18

Analysis available at
<http://www.legislature.mi.gov>

(Enacted as Public Act 241 of 2018)

BRIEF SUMMARY: Senate Bill 344 would amend the Revised School Code to allow school districts and public school academies (PSAs, or charter schools) to indicate on a student’s transcript or diploma that a student has earned a STEM (Science, Technology, Engineering, and Mathematics) endorsement if the student has fulfilled the requirements for the endorsement.

FISCAL IMPACT: Senate Bill 344 would have no fiscal impact on the state but could increase costs for local school districts or PSAs. While the bill does not mandate that local school districts and PSAs notate a pupil’s transcript or diploma to indicate that the pupil has earned a STEM endorsement, certifying that a student completed the necessary requirements and creating and applying the notation to transcripts and diplomas could increase administrative costs.

THE APPARENT PROBLEM:

According to the National Conference of State Legislatures, about 3 million more STEM job openings existed in 2016 than there were qualified employees to fill them, nearly tripling the total from 2010. In Michigan, legislation in 2015 created a MiSTEM Advisory Council, composed of business, higher education, K-12 education, philanthropic leaders, and nonvoting members of the legislature. In its December 2016 report,¹ the council strongly supported Senate Bill 170² of the 2015-2016 legislative session, which proposed the same STEM endorsement as in SB 344 for students who had engaged in high-quality STEM activities.

The council also recommended all of the following:

- Support of a state-funded, coordinated campaign to build STEM awareness, and communication of needs and opportunities for all stakeholders.
- Empowerment of STEM teachers by integrating new Every Student Succeeds Act (ESSA) law changes into the state plan and offering incentives for STEM teachers to remain in the education system.
- Implementation of a proven, outcome-based model for regional collaboration that integrates all STEM stakeholders (business and education).

¹ MiSTEM Advisory Council report, December 15, 2016

https://www.michigan.gov/documents/mde/MISTEM_AdvisoryCouncil_report_12-2016_Final_547718_7.pdf

² The council also supported Senate Bill 169 of 2015-2016, which was tie-barred to SB 170 and allowed a similar endorsement for home-schooled and nonpublic school students.

- Implementation of metrics to evaluate and recognize quality STEM programs.
- Rebranding the Michigan Math and Science Centers as Michigan STEM Centers and aligning them regionally to the 10 Prosperity Zones in Michigan.
- Changing STEM funding based on current allocations.

THE CONTENT OF THE BILL:

The bill would amend the Revised School Code to allow school districts and PSAs to indicate on a student’s transcript or diploma that a student has earned a STEM endorsement if the student has fulfilled the requirements for the endorsement. If a student has fulfilled all of the following in grades 7 to 12, the district or PSA would be able to note the endorsement on the student’s transcript or diploma:

- All applicable requirements of the Michigan Merit Standard for a high school diploma under Sections 1278a and 1278b of the Code (listed below in **Background**).
- At least **6 credits in mathematics**. At least 5 of these would have to be in algebra I, geometry, algebra II, trigonometry, statistics, precalculus, calculus, applied math, accounting, business math, or financial literacy, or courses that cover the same content standards as those courses. At least one credit would have to be precalculus or calculus.
- At least **6 credits in science**. At least 4 of these would have to be in biology, chemistry, physics, anatomy, agricultural science, computer science, CTE, forensics, astronomy, Earth science, environmental science, geology, physiology, or microbiology, or courses that cover the same content standards as those courses.
- At least **½ credit featuring significant coursework involving technology activities** and **½ credit featuring significant coursework involving engineering activities**. These credits could be gained through separate technology and engineering coursework or in conjunction with coursework associated with the credits above.

The bill would take effect 90 days after enactment.

Proposed MCL 380.1278d

HOUSE COMMITTEE ACTION:

The House Workforce and Talent Development committee adopted an H-2 substitute, which reworded the requirement that one of the courses for the STEM endorsement be precalculus or calculus. Initially, the bill required that the course cover the content standards for one of those courses, but the Michigan Department of Education does not have content standards for those courses.

BACKGROUND INFORMATION:

Michigan high school students must complete the Merit Standard Curriculum, or an alternative personal curriculum (developed by faculty with the student, parents, and the school superintendent), in order to earn a high school diploma. The Merit Curriculum, described in Sections 1278a and 1278b of the Code, entails the following course of study:

- 4 credits in English language arts.
- 3 credits in science, including at least biology and either chemistry, physics, anatomy, or agricultural science, or a program providing the same content (with a fourth science credit strongly encouraged). A student may fulfill the requirement for the third science credit by completing a Michigan Department of Education (MDE)-approved computer science program or curriculum or formal career and technical education (CTE) program or curriculum.
- 4 credits in mathematics, including at least algebra I, geometry, and algebra II (or an integrated 3-credit sequence of this content), plus an additional math credit in trigonometry, statistics, precalculus, calculus, applied math, accounting, business math, a retake of algebra II, or a course in financial literacy. A student may also fulfill the algebra II requirements by completing an MDE-approved formal CTE program or curriculum that has appropriately embedded mathematics content as described in the law.
- 3 credits in social science, including at least 1 credit in United States history and geography, 1 credit in world history and geography, ½ credit in economics, and a civics course.
- 1 credit in health and physical education.
- 1 credit in visual, performing, or applied arts.
- Beginning with the class of 2016, 2 credits that are grade-appropriate in a language other than English between kindergarten and 12th grade. For students graduating high school in 2016 to 2021 only, one credit of that requirement may be met in whole or in part by completing a department-approved formal technical education program or curriculum or by completing visual or performing arts instruction that is in addition to the one credit of visual arts, performing arts, or applied arts that is also required to receive a high school diploma.

ARGUMENTS:

For:

Proponents touted the bill and endorsement as a way of recognizing and rewarding those whose interest in STEM led them to fulfill additional educational requirements above those required by a high school diploma. They argued that employers do not know what is required of those who earn a high school diploma and—especially for those seeking work immediately following high school graduation—a STEM endorsement would help those students stand out as hard workers and good students. And, for students seeking work in the skilled trades, a background in math, science, engineering, and technology could translate into placement into more specialized positions, given the evidence of proficiency.

Against:

Opponents argued that they were not opposed to an increased emphasis on STEM education; rather, they argued that the bill was unlikely to meet its goal of increasing STEM participation. They argued that a stamp on the diploma would not increase access to or interest in STEM subjects—it would simply indicate the student’s interests.

Others may argue that a STEM endorsement arbitrarily elevates some students (and job seekers) above others. After all, while science and math prepare students with valuable skills, so, too, do history and English. Should the legislature give certain students an advantage in securing work and advancement over others simply because of their interests in school subjects? Beyond benefitting students with certain interests, it could also advantage students from certain regions, they could argue. Because the endorsement is permissive, it could favor students in districts with the endorsement over those in other districts, for no other reason than the luck of geography.

POSITIONS:

The following organizations indicated support for the bill (5-15-18):

- Michigan Department of Education
- Michigan Chamber of Commerce
- Michigan Manufacturers Association
- Michigan Association of Secondary School Principals
- Michigan Association of Intermediate School Administrators
- Michigan Association of School Administrators

A representative of the Michigan Association of School Boards testified in opposition to the bill. (5-15-18)

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■ This analysis was prepared by nonpartisan House Fiscal Agency staff for use by House members in their deliberations, and does not constitute an official statement of legislative intent.