



**GOVERNING BOARD AGENDA ITEM  
AMPHITHEATER UNIFIED SCHOOL DISTRICT NO. 10**

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**DATE OF MEETING:**      **February 6, 2018**

**TITLE:**            **STEM Diploma or Seal**

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**BACKGROUND:**

Providing a STEM diploma or seal to students who complete specific requirements in science, technology, engineering, and math is a growing trend across the country. At least five states currently offer special endorsements for high school graduates who demonstrate strong achievement in STEM courses. While no specific requirements currently exist at the state level in Arizona, there are districts in the state that offer such options. Amphitheater Public Schools should establish this for its graduates.

Requirements for students can vary, but generally could include:

- Completing a minimum number of math, science, technology, and engineering courses at rigorous levels
- Attaining a minimum grade-point-average and/or
- Achieving specified scores on standardized tests such as the SAT or ACT
- Completing of a capstone project

“Districts that offer such seals (or diplomas) will benefit,” says Claus von Zastrow, chief operating officer at *Change the Equation*, a nonprofit representing businesses pushing for stronger STEM in schools.

The business community wants students to come better prepared for employment, while colleges and universities want K-12 to provide coursework that prepares students for higher education. The District’s discussion must focus on these two perspectives. The inclusion of CTE programs can help address both pathways.

**COURSEWORK:**

**Science**

Complete 4 years of science, to include at a minimum:

- Biology, pre-AP Biology, or AP Biology
- Chemistry, pre-AP Chemistry, or AP Chemistry
- Engineering Physics, pre-AP Physics, or AP Physics
- Plus at least one additional credit in an advanced level science class (e.g. Bioscience program [CTE 2-year program which can be taken as dual enrollment courses for six transferable university credits by paying tuition to the U of A], Sports Medicine program [CTE 2-year program], Anatomy and Physiology, AP Environmental, Astronomy, or Forensics)

At a minimum, one of these science classes must be at the “weighted grade” level or eligible for college credit.

**Technology:**

Complete a 3-year course program related to technology, to include at a minimum:

- Software Development program:
  - AP Computer Science
  - Software Design I
  - Software Design II
  - (optional) Software Design III (students may acquire industry certifications during the program)

Or

- Web Page Development program
  - AP Computer Science
  - Web Page Development I
  - Web Page Development II
  - (optional) Webpage Development III

At a minimum, one of these classes must be at the “weighted grade” level or eligible for college credit. Both programs also offer an internship option.

**Engineering:**

Complete three credits of engineering, to include at a minimum:

- Credits in the CTE Engineering program sequence:
  - Introduction to Engineering
  - Design Principles of Engineering
  - plus one credit in Engineering 102

Engineering 102 carries a “weighted grade” level. Students enrolled in Engineering 102 can be dual enrolled with the U of A’s Engineering 102 for three transferable university credits by paying tuition to the U of A.

**Math:**

Four years of math, to include at a minimum:

- Algebra I
- Advanced/Accelerated Geometry
- Advanced/Accelerated Algebra II/Trigonometry
- At least one additional credit in a higher level math class (i.e. AP Statistics, Introduction to Calculus, AP Calculus AB and/or BC, or another math class which carries college credit).

At a minimum, one of these classes must be at the “weighted grade” level or eligible for college credit.

**Grade Point Average:**

Students who obtain a STEM diploma/seal must have a 3.2 unweighted GPA. This is comparable with the Arizona Board of Regents requirements.

**School Accreditation:**

A school issuing a STEM diploma must have earned STEM Accreditation through AdvancED. The reasoning behind this is that this STEM diploma/seal must be credible for college and university recognition purposes.

**Additional recommendation for consideration:**

The District should also examine the feasibility of establishing an “Innovation Center” where students, staff, or community members could take courses to earn certifications, such as A+ Certification or Microsoft Certification. This could even be offered as an evening or Saturday option for students and community members for a fee.

**Timeline:**

Upon attaining an AdvancED STEM accreditation for the school, the next freshman class could begin the process of earning a STEM diploma/seal.

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**RECOMMENDATION:**

This item is presented as a Study/Action agenda item.

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**INITIATED BY:**

*Monica Nelson*

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Monica Nelson, Associate Superintendent

Date: January 19, 2018

*Todd A. Jaeger*

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Todd A. Jaeger, J.D., Superintendent