

CSAC Question 4: Plan for coordination of at least one complete CTE program of study for all students over the course of the next 4 years. This should clearly illustrate how ALL students will have access to and ability to complete the program before first graduation.

The Delaware STEM Academy is implementing a state model CTE program of study and has been approved for the program of study under the career cluster of STEM and career pathway title of Engineering and Technology. The Engineering program is a 3 credit course pathway. In order to accommodate the cohort of 10th grade students, the DE STEM Academy will make minor adjustments to the master schedule in order to offer the first program of study course titled *Introduction to Engineering Design (IED)* which is part of the Project Lead the Way (PLTW) Engineering program. The identified staff member as the STEM teacher will receive training in late July 2016 through PLTW. The counselor will also participate in the training in order to best serve students as they move forward in their pathway to graduation. As recognized, the Delaware STEM Academy will apply for additional state approved programs of study by the October 2016 deadline, including Computer Science, to provide students with options for obtaining required credits for graduation purposes. Professional engineers on our Board and the Technical Advisory Group are also available to assist the teacher as needed in delivering this course and Introduction to Engineering.

| STAFF: | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|----------|------------|---------------|------------------|----------|------------------|--------------|----------|---------------|---------------------------------------|
| Block | ELA 1 | SS 1 | Math 1 | STEM | Sci.1 | WL (.25 fte) | SPED | SPED | Teacher Leader/Dean of Students |
| 1 | | | IM II | STEM | Prep | WL II | | ED/Compliance | Digital Media |
| 2 | 9-1 & 9-2* | | Digital Media | STEM | Earth Science | Prep | ELA/SS* | Pull out | Digital Media |
| 3 | Prep | Grade 10 * | IM I | STEM | Earth Science | | ELA 10* | ED/Compliance | Digital Media |
| 4 | | | IM I | PLTW | Earth Science | | Prep | Pull Out | Dean of Students |
| 5 | 9-3 & 9-4 | | IM II* | Prep | RTI | | IM II* | ED/Compliance | |
| 6 | | Prep | IM I | | Earth Science | | | Pull OUT | Dean of Students |
| 7 | BIO/LIT* | RTI | Prep | BIO/LIT* | STEM | | BIO/LIT* | ED/Compliance | Dean of Students |
| Advisory | 9-1 | 9-2 | 9-3 | 10-1 | 9-4 | | Mixed | Prep | Prep |

Engineering - 3 Credit Pathway

Delaware STEM Academy www.destemacademy.org

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|---|--|------------------------------------|
| Minimum HS Graduation Requirements | PROGRAM OF STUDY MATRIX: MIDDLE - HIGH SCHOOL – POSTSECONDARY | Career Pathway Requirements |
|---|--|------------------------------------|

| | Grade | English | Math | Science | Social Studies | Additional Required Courses | Career & Technical Courses | Other Required or Elective Courses |
|--|--------------|----------------|-------------|----------------|-----------------------|------------------------------------|---------------------------------------|---|
|--|--------------|----------------|-------------|----------------|-----------------------|------------------------------------|---------------------------------------|---|

Student Success Plans outlining career goals should be utilized through the advisement process.

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| Secondary | 9 | ELA 9 (CAGE) | Algebra I (IMP-I) | NGSS Aligned Earth Science | Civics/Geography (CAGE) | World Language I | Exploration in STEM: Engineering Design | |
| | 10 | ELA 10 (BioLit) | IMP-II | NGSS Aligned Biology (BioLit) | Economics/Personal Finance | World Language II | Introduction to Engineering(IED) | |
| | 11 | ELA 11 (Lit/US His) | IMP-III | NGSS Aligned Chemistry | US History (Lit/US His) | Physical Education (≥1 Credit) | Principles of Engineering (POE) | |
| | 12 | ELA 12 (World Lit/His) | Pre-Calculus | NGSS Aligned Physics | World History (Lit/World His) | Health Education(≥ 0.5 Credit) | Engineering Design and Development (EDD) | |

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|----------------------|-----------|---|---|
| Postsecondary | 13 | The Department of Education has negotiated articulation agreements with: Delaware Technical Community College's Architectural Engineering Technology, Civil Engineering Technology, Surveying and Geomatics Engineering Technology, Environmental Engineering Technology, Design Engineering (Mechanical) Technology, Computer Aided Drafting and Design, Fire Protection Engineering Technology, Electronics Engineering Technology, Electromechanical Engineering Technology, Electronics Engineering Transfer Option (2+2 with DSU), or Electronics Engineering Technology programs with the option in the Biomedical Instrumentation or Computer Engineering Technology programs; and Delaware State University's Electrical and Electronics Engineering Technology or Computer Information Systems programs. Articulation agreements are currently being negotiated with the University of Delaware. | All programs of study should meet the students' career goals with regard to required degrees and/or certifications. Required courses will vary by PS institution. |
| | 14 | | |
| | 15 | Continue courses in the area of specialization. | |
| | 16 | | |

Additional Learning Opportunities

| Early Career Opportunities: | Early College Opportunities: | Industry Recognized Certifications/Licenses: | Student Organization: |
|--|---|--|---|
| <input type="checkbox"/> Cooperative Education <input checked="" type="checkbox"/> Internship <input type="checkbox"/> Other: <u>Other Early Career Opportunities</u> | <input type="checkbox"/> Dual Enrollment <input type="checkbox"/> Advanced Placement <input checked="" type="checkbox"/> Articulated Credit <u>Delaware State University:</u> ENGR210 - Digital Logic Design - 3 credits <u>Delaware Technical Community College:</u> EDD171 - Introduction to Computer Aided Drafting using AutoCad - 3 credits | <input type="checkbox"/> <u>Certification/License</u> <input type="checkbox"/> <u>Certification/License</u> | <input checked="" type="checkbox"/> <u>TSA – Technology Student Association</u> |

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| | <p>ELC127 - Digital Electronics - 4 credits</p> <p><input type="checkbox"/> Pre-Apprenticeship</p> <p><input type="checkbox"/> Other</p> | | |
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Sample Careers By Educational Level

| Employment Opportunities (Upon Completion of HS Pathway) | Technical Training or Associate Degree | Bachelor's Degree | Master's Degree or Above |
|---|--|---|--|
| | <p>CAD Operator</p> <p>Calibration Electronics Technician</p> <p>Certified Optical Technician</p> <p>Computer Electronics Technician</p> <p>Computer Science Technician</p> <p>Computer Systems Analyst</p> <p>Drafting Engineer*Drafter</p> <p>Geothermal Engineer</p> <p>Manufacturing Technician</p> <p>Packaging Technician</p> <p>Project Technician</p> <p>Quality Technician</p> <p>Survey Technician</p> | <p>Aeronautical engineer</p> <p>Automation Manufacturing Engineer</p> <p>Automotive Engineer*</p> <p>Biomedical Technician</p> <p>Building Construction Engineer</p> <p>Civil Engineer</p> <p>Computer Hardware Engineer</p> <p>Electrical Engineer*</p> <p>Industrial Materials Scientist*</p> <p>Manufacturing Processes Engineer</p> <p>Nuclear Engineer*</p> <p>Power Systems Engineer</p> <p>Robotics Engineer *</p> | <p>Aeronautical engineer</p> <p>Architectural Engineer</p> <p>Biomedical Engineer</p> <p>Biotechnology Engineer</p> <p>Computer Engineer</p> <p>Product Design Engineer</p> <p>Satellite Engineer</p> <p>Technology Engineer</p> |

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| | | Software Engineer Structural Engineer | |
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*May require higher education depending on job responsibilities.

Feeder Middle School(s):

Colleges/Universities and Articulated Credit Agreements:

Articulation agreements/Memorandums of Understanding: Delaware Technical and Community College, Delaware State University, and the University of Delaware

LEA Additional Graduation Requirements: