

# Engineering Technology: Engineering II

Apply the design process involving **EII1**

- a** problem identification, conceptualization, and research **EII1A**

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- b** refinement of preliminary ideas, design analysis, development and implementation **EII1B**

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- c** detailed documentation of final design, optimization and final presentation. **EII1C**

Recognize how the history of design (including artistic periods, styles, and form and function) influences product development. **EII2**

- 2** Recognize how the history of design (including artistic periods, styles, and form and function) influences product development. **EII2**

Research information about professional engineering-related organizations **EII3**

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Develop and demonstrate competencies with various engineering drawings. **EII4**

- 4** Develop and demonstrate competencies with various engineering drawings. **EII4**

Research selected disciplines of engineering areas and incorporate computer-aided design and problem solving such as **EII5**

- a** manufacturing **EII5A**

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- b** power/energy/transportation **EII5B**

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- c** bio-medical **EII5C**

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- d** robotics **EII5D**

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- e** hydraulics **EII5E**

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- f** electricity/electronics, **EII5F**

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**g communications** EII5G

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**h construction systems** EII5H

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**i alternative energy** EII5I

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Develop solutions to problems within engineering areas such as manufacturing, power/energy/transportation, bio-medical, robotics, hydraulics, electricity/electronics, communications, construction systems, and/or alternative energy, and incorporate computer-aided design and problem solving. EII6

**6** Develop solutions to problems within engineering areas such as manufacturing, power/energy/transportation, bio-medical, robotics, hydraulics, electricity/electronics, communications, construction systems, and/or alternative energy, and incorporate computer-aided design and problem solving. EII6

Apply geometric relationships of forms and shapes, lines, various polygons, geometric constraints, Cartesian coordinate system, and origin planes. EII7

**7** Apply geometric relationships of forms and shapes, lines, various polygons, geometric constraints, Cartesian coordinate system, and origin planes. EII7

Perform modeling using conceptual, graphical, physical, mathematical, and computergenerated techniques, including 3-dimensional software. EII8

**8** Perform modeling using conceptual, graphical, physical, mathematical, and computergenerated techniques, including 3-dimensional software. EII8

Develop knowledge and understanding of basic electric, welding and industrial process and symbols EII9

**9** Develop knowledge and understanding of basic electric, welding and industrial process and symbols EII9

Develop knowledge and understanding of concepts of CAD (computer-aided

**10** Develop knowledge and understanding of concepts of CAD (computer-aided design), construction/fabrication techniques, structural systems, hydraulics, and pneumatics systems. EII10

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construction/fabrication  
techniques, structural  
systems, hydraulics, and  
pneumatics  
systems. **EII10**

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**Conduct model analysis  
and verification.** **EII11**

**11 Conduct model analysis and verification.** **EII11**

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**Create model  
documentation  
including working  
drawings, dimensioning,  
and annotations** **EII12**

**12 Create model documentation including working drawings, dimensioning, and annotations** **EII12**

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**Develop product  
presentations using  
proper communication  
techniques and  
appropriate  
presentation aids.** **EII13**

**13 Develop product presentations using proper communication techniques and appropriate presentation aids.** **EII13**