# GACE® Engineering and Technology Education Assessment
# Test II (053) Curriculum Crosswalk

**Required Coursework Numbers**

| Subarea I. The Nature of Technology and Society (33%) | | | | | | | | | | | | | | | | | |
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| *Objective 1: Understand human, cultural, and social issues related to technology and practice legal and ethical behavior* | | | | | | | | | | | | | | | | | |
| A. Explains the cultural, social, economic, and political effects of technology | | | | | | | | | | | | | | | | | |
| B. Describes the advantages and disadvantages of technology on the environment and society | | | | | | | | | | | | | | | | | |
| C. Recognizes the role of society in the development and use of technology | | | | | | | | | | | | | | | | | |
| *Objective 2: Demonstrate problem solving and construct knowledge about the fundamentals of technology* | | | | | | | | | | | | | | | | | |
| A. Describes the characteristics and scope of technology | | | | | | | | | | | | | | | | | |
| B. Identifies the core concepts of technology (STL2) | | | | | | | | | | | | | | | | | |
| C. Explains the relationships among technologies and the connections between technology and other fields of study | | | | | | | | | | | | | | | | | |
| D. Describes the influence of technology on history | | | | | | | | | | | | | | | | | |

## Required Coursework Numbers

| Subarea II. Abilities for a Technological World (33%) | | | | | | | | | | | | | | | | | |
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| *Objective 1: Demonstrate ability to use technological products and systems to support learning* | | | | | | | | | | | | | | | | | |
| A. Understands and applies the universal systems model of technology | | | | | | | | | | | | | | | | | |
| B. Distinguishes between the engineering design process and the universal systems model | | | | | | | | | | | | | | | | | |
| *Objective 2: Describe the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving in engineering and technology education* | | | | | | | | | | | | | | | | | |
| A. Develops an understanding of the core concepts of invention and innovation | | | | | | | | | | | | | | | | | |
| B. Develops an understanding of research and development as a specific problem-solving approach | | | | | | | | | | | | | | | | | |
| *Objective 3: Demonstrate an understanding of and be able to select and use various technologies* | | | | | | | | | | | | | | | | | |
| A. Has an understanding of and uses | | | | | | | | | | | | | | | | | |
| • medical technologies | | | | | | | | | | | | | | | | | |
| • agricultural and related biotechnologies | | | | | | | | | | | | | | | | | |
| • energy and power technologies | | | | | | | | | | | | | | | | | |
| • information and communication technologies | | | | | | | | | | | | | | | | | |
| • transportation technologies | | | | | | | | | | | | | | | | | |
| • manufacturing technologies | | | | | | | | | | | | | | | | | |
| • construction technologies | | | | | | | | | | | | | | | | | |

| Subarea III. Design and Modeling (33%) | | | | | | | | | | | | | | | | |
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| *Objective 1: Know how to implement technology across content areas to foster collaboration, communication, and innovation* | | | | | | | | | | | | | | | | |
| A.  Demonstrates oral and written skills to effectively communicate engineering and technology design decisions | | | | | | | | | | | | | | | | |
| B.  Demonstrates management skills for leading interdisciplinary teams to solve complex problems | | | | | | | | | | | | | | | | |
| *Objective 2: Determine the selection and application of tools to gather, evaluate, validate, and use information* | | | | | | | | | | | | | | | | |
| A.  Identifies the attributes of design | | | | | | | | | | | | | | | | |
| B.  Evaluates the results of the engineering design process | | | | | | | | | | | | | | | | |
| C.  Uses and analyzes modeling and prototyping | | | | | | | | | | | | | | | | |
| •  Mathematical | | | | | | | | | | | | | | | | |
| •  Physical | | | | | | | | | | | | | | | | |
| •  Interpret data and report | | | | | | | | | | | | | | | | |
| •  Prototyping | | | | | | | | | | | | | | | | |