



GACE® Engineering and Technology Education Assessment Test I (052) Curriculum Crosswalk

Required Coursework Numbers

Subarea I. Engineering Design and Application (40%)																				
<i>Objective 1: Understand the engineering design process</i>																				
A. Demonstrates ability to apply the engineering design process to model and solve problems using engineering principles																				
B. Applies skills to use and maintain technological products and systems for engineering design																				
C. Assesses the impact of products and systems																				
<i>Objective 2: Apply and use engineering principles in the engineering design process</i>																				
A. Is familiar with engineering principles within																				
• medical technologies																				
• agricultural and related biotechnologies																				
• energy and power technologies																				
• information and communication technologies																				
• transportation technologies																				
• manufacturing technologies																				
• construction technologies																				
B. Understands the engineering design process, including iterative design, identifying realistic constraints, and applying decision making skills for selecting optimal solutions																				

Required Coursework Numbers

Subarea II. Engineering and Technology Teaching Practices (33%)															
<i>Objective 1: Understand and use a variety of effective teaching practices that enhance and extend learning of engineering technology</i>															
A. Ensures that the space and physical arrangement of instructional facilities are conducive to effective instruction and safety															
B. Develops instructional goals and objectives for the engineering and technology education curriculum that are clear, relevant, and meaningful and that can be assessed															
C. Knows the management skills needed to organize an agribusiness															
<i>Objective 2: Understand and be able to interpret, develop, and implement curriculums for engineering and technology education programs, including instructional methods of teaching for the classroom and engineering and technology education lab activities</i>															
A. Implements a variety of teaching methods (e.g., production lab and classroom workspaces) to enhance student learning in engineering and technology education															
B. Selects and uses appropriate materials and resources for effectively teaching subject material in engineering and technology education															
C. Demonstrates and incorporates safe laboratory procedures in classroom, lab, and field environments															

Required Coursework Numbers

D. Uses standard and authentic assessment tools and strategies to monitor individual and group progress in achieving learning goals																
E. Provides students with leadership opportunities and practical experience in engineering and technology-related fields through student organizations and professional organizations																
Subarea III. Engineering Profession and Professional Growth (27%)																
<i>Objective 1: Understand the organizational structure and historical development of career and engineering education and practice and its relationship to American business, industry, and careers</i>																
A. Describes how engineering and technology education literacy can assist individuals in participating in society's decisions regarding the use of technology																
B. Identifies sources of information about regulations and guidelines for the construction and use of instructional facilities in engineering and technology education																
C. Is familiar with engineering disciplines, such as																
• electrical engineering																
• chemical engineering																
• mechanical engineering																
• civil engineering																
• industrial engineering																
• aeronautical/aerospace engineering																
• automotive engineering																

Required Coursework Numbers

• computer software engineering																
• biomedical engineering																
<i>Objective 2: Work with business, industry, and labor in establishing school/business/community partnerships and advisory committees</i>																
A. Can apply oral and written skills to effectively communicate engineering and technology design decisions																
B. Can apply management skills for leading interdisciplinary teams of students to solve complex problems																