Exploring Engineering & Technology
Grade 6

ENGR-EET-1: Students will examine the nature of engineering & technology.
A) Define engineering & technology
B) Compare the relationship of math and science to engineering

ENGR-EET-2: Students will evaluate the impacts of engineering & technology on Society
A) Explore the historical impacts of engineering & technology
B) Examine the effects of engineering & technology on society including social, cultural, political, economic and environmental impacts
C) Assess the impact(s) of technological products and systems
D) Demonstrate an understanding of the Universal Systems Model

ENGR-EET-3: Students will explain the engineering design process.
A) Examine the engineering design attributes
B) Demonstrate the principles of research and design

ENGR-EET-4: Students will demonstrate an understanding for a technological world through hands-on projects.
A) Apply the engineering design process
B) Use and maintain technological products and systems
C) Apply the Universal Systems Model to existing systems

ENGR-EET-5: Students will analyze the designed world of engineering, electronics, manufacturing, and energy systems.
A) Examine Engineering
B) Examine Electronics
C) Examine Manufacturing
D) Examine Energy Systems

ENGR-EET-6: Students will examine and research careers in fields related to engineering & technology.
A) Identify educational requirements for engineering & technology careers
B) Investigate careers in the four engineering and technology pathways (Energy Systems; Electronics; Manufacturing; and Engineering)
C) Investigate earnings potential for engineering & technology careers
D) Identify gender and diversity related issues in engineering & technology careers

ENGR-EET-7: Students will develop leadership skills and work ethics.
A) Demonstrate work ethics within the classroom and lab environment
B) Investigate leadership skills through co-curricular activities

Invention and Innovation
Grade 7

ENGR-II-1: Students will learn the concept of invention and innovation.
A) Define related invention and innovation terms
B) Compare invention to innovation
C) Examine the role that Engineering & Technology and society play in the invention and innovation process
D) Identify an important past invention or innovation
E) Research an artifact related to Engineering and Technology that is at least 25 years old

ENGR-II-2: Students will examine the core concepts of engineering and technology.
A) Identify one or two major inventions or innovations related to each Engineering and Technology pathway
B) Construct a simple technological system
C) Explain how your technological system operates
D) Reverse engineer a consumer product

ENGR-II-3: Students will demonstrate engineering design and problem solving skills.
A) Define the designed world and its connotations
B) Examine the steps of the Technological Design Process
C) Describe the steps of the Engineering Design Process
D) Compare the Technological Design Process, the Engineering Design Process, and the Scientific Method
E) Troubleshoot a product or system

ENGR-II-4: Students will invent or innovate a technological product.
A) Apply a design process in the invention or innovation of a product or system
B) Design a simple invention or innovation
C) Construct a simple invention or innovation
D) Demonstrate appropriate safety in the invention or innovation of a product or system
E) Maintain a portfolio of the invention process
F) Demonstrate the use and/or operation of the invention or innovation
G) Evaluate the invention or innovation

ENGR-II-5: Students will examine the impacts of inventions and innovations on society.
A) Discuss the societal impacts of a specific invention or innovation
B) Investigate important inventions or innovations related to Engineering and Technology and how they have impacted our lives
C) Describe the life-cycle of a product
D) Analyze positive and negative effects of inventions and innovations

ENGR-II-6: Students will develop leadership skills and work ethics.
A) Demonstrate work ethics within the classroom and lab environment
B) Investigate leadership skills through co-curricular activities

Technological Systems
Grade 8

ENGR-TS-1: The students will develop an understanding of the Universal Systems Model.
A) Define Universal Systems Model
B) Identify the components of a system
C) Examine a variety of simple, common systems

ENGR-TS-2: The students will develop an understanding of how the design process is used to develop a technological system.
A) Identify the steps of the design process
B) Identify how systems are used in a variety of settings
C) Illustrate how the systems model is utilized in the production of goods
D) Construct and work with a variety of systems, including Engineering, Electronics, Manufacturing, and Energy

ENGR-TS-3: The students will develop an understanding of how humans interact with systems.
A) Operate technological systems
B) Maintain technological systems
C) Constructing technological systems
D) Design technological systems

ENGR-TS-4: The students will develop an understanding of how systems evolve from one stage to another.
A) Illustrate the evolution of a variety of technological systems
B) Analyze the reason for the evolution of technological systems
C) Investigate the cause of system failures

ENGR-TS-5: The students will recognize and be able to forecast trends in the development of technological systems.
A) Gathers data and examine trends that lead to technological advancement
B) Propose a creative and futuristic technological system that may solve emerging human needs
C) Design and create a model of a futuristic technological system
D) Analyze the qualities of various futuristic technological systems (i.e. benefits, drawbacks, overall efficiency of system, etc.)

ENGR-TS-6: The students will recognize relationships among technologies and assess the impact of integrated systems.
A) Identify a complex technological system that is made up of several subsystems
B) Explain how the subsystems work together to enable the complex system
C) Analyze the qualities of various integrated technological systems (i.e. Benefits, Drawbacks, overall efficiency of system, etc.)

ENGR-TS-7: Students will develop leadership skills and work ethics.
A) Demonstrate work ethics within the classroom and lab environment
B) Investigate leadership skills through co-curricular activities