Course Assessment Criteria:

Unit Title	Big Idea	Below Average	Average	Excellent
Unit 1: Technological Inventions and Innovations	Inventions and innovations are a result of evolutionary technological development and systematic research and development.	The student has a shallow grasp of the big idea; recognizes but inadequately explains the evolutionary process of inventing and innovating; incompletely analyzes the technological effects on new processes; poorly describes the advertising and marketing effects on technology and provides no examples; and poorly describes the role of research and development as a problem-solving approach. The student has inaccurate knowledge of how people have increased their capabilities and skills, poorly describes historical periods of technological evolution through time, and provides no examples of the inventions and innovations that mark those periods.	The student shows evidence of grasping the big idea; recognizes and explains the evolutionary process of inventing and innovating; adequately analyzes the technological effects on new processes; describes the advertising and marketing effects on technology by providing an example; and accurately describes the role of research and development as a problem-solving approach. The student has adequate knowledge of how people have increased their capabilities and skills; and adequately describes historical periods of technological evolution through time and the inventions and innovations that mark those periods.	The student thoroughly grasps the big idea; recognizes and thoroughly explains the evolutionary process of inventing and innovating; expertly analyzes the technological effects on new processes; describes the advertising and marketing effects on technology by providing numerous examples; and thoroughly describes the role of research and development as a problem-solving approach. The student has expert knowledge of how people have increased their capabilities and skills; and thoroughly describes historical periods of technological evolution through time and the numerous inventions and innovations that mark those periods.
Unit 2: The Engineering Design Process	The Engineering Design process is a systematic, iterative problem-solving method that produces solutions to meet	The student has a shallow grasp of the big idea; inadequately makes use of design principles when designing solutions to problems; utilizes few	The student shows evidence of grasping the big idea; adequately makes use of design principles when designing solutions to problems;	The student thoroughly grasps the big idea; expertly makes use of design principles when designing solutions to problems; utilizes all of

	human wants and desires.	of the steps in the design process when solving problems; has little concept of the criteria and constraints of a design problem; creates poorly crafted prototypes and utilizes few other modeling techniques when testing solutions; collects and processes little information during the testing phase; sloppily applies the design process; and documents very little of the work completed.	utilizes most of the steps in the design process when solving problems; identifies most of the criteria and many of the constraints of a design problem; creates accurate prototypes and utilizes other modeling techniques when testing solutions; accurately collects and processes information during the testing phase; capably applies the design process; and documents all work completed.	the steps in the design process when solving problems; identifies and explains all of the criteria and constraints of a design problem; expertly crafts accurate prototypes and utilizes other modeling techniques when testing solutions; thoroughly collects and processes information during the testing phase; expertly applies the design process; and documents all work completed.
Unit 3: The Designed World	The designed world is the product of a design process that provides ways to turn resources (materials, tools and machines, people, information, energy, capital, and time) into products and services.	The student has a shallow grasp of the big idea; poorly selecting and using energy and power technologies to explore the processing and controlling of energy resources; poorly selecting and using manufacturing technologies and not understanding that modern manufacturing produces quality goods at low prices to improve the quality of life; poorly selecting and using construction technologies and inadequately recognizing that cultural norms, environmental impacts, and other requirements impact	The student shows evidence of grasping the big idea; selecting and using energy and power technologies to explore the processing and controlling of energy resources; selecting and using manufacturing technologies and understanding that modern manufacturing produces quality goods at low prices to improve the quality of life; selecting and using construction technologies and recognizing that cultural norms, environmental impacts, and other requirements impact the design of structures; selecting	The student thoroughly grasps the big idea; expertly selecting and using energy and power technologies to explore the processing and controlling of energy resources; expertly selecting and using manufacturing technologies and understanding that modern manufacturing produces quality goods at low prices to improve the quality of life; expertly selecting and using construction technologies and recognizing that cultural norms, environmental impacts, and other requirements impact the design of

		the design of structures; poorly selecting and using information and communication technologies that support and maintain the economic growth of all other technologies; poorly selecting and using transportation technologies that support agricultural and all other technological activities; and inadequately exploring and poorly understanding the technologies of telemedicine and other medical technologies and how they improve the health and well-being of society.	and using information and communication technologies that support and maintain the economic growth of all other technologies; selecting and using transportation technologies that support agricultural and all other technological activities; and exploring and understanding the technologies of telemedicine and other medical technologies and how they improve the health and well-being of society.	structures; expertly selecting and using information and communication technologies that best support and maintain the economic growth of all other technologies; expertly selecting and using transportation technologies that best support agricultural and all other technological activities; and thoroughly exploring and understanding the technologies of telemedicine and other medical technologies and how they improve the health and well-being of society.
Unit 4: Systems	Systems are the building blocks of technology, and users must properly maintain, troubleshoot, and analyze systems to ensure safe and proper function.	The student has a shallow grasp of the big idea; inadequately analyses the core technologies used in larger, more complex technologies; provides few examples of the systems model in one or more technologies; has no concept how the technique of reverse engineering can be used to analyze systems; and poorly uses the technique of troubleshooting to solve problems and	The student shows evidence of grasping the big idea; adequately analyses the core technologies used in larger, more complex technologies; provides examples of the systems model in a variety of technologies; adequately analyzes how a system works through the technique of reverse engineering; and adequately uses the technique of troubleshooting to solve problems and	The student thoroughly grasps the big idea; thoroughly analyses the core technologies used in larger, more complex technologies; provides numerous examples of the systems model in a variety of technologies; expertly analyzes how a system works through the technique of reverse engineering; and repeatedly uses the technique of troubleshooting to solve problems and

		recommend solutions to problems.	recommend solutions to problems.	recommend solutions to problems.
Unit 5: Lunar Plant Growth Chamber	Space exploration employs an integrated intermodal system of transportation to move people and equipment on Earth, between Earth and other planets, and on other planets.	The student has a shallow grasp of the big idea; inadequately explaining intermodalism and how it is utilized in the transportation industry; poorly explaining the NASA transportation cycle as it pertains to large heavy equipment; inadequately describing the mission of Ares I and Ares V in their cargo and crew transportation roles; and inaccurately describing the decision-making and management processes that NASA uses in mission planning.	The student shows evidence of grasping the big idea; adequately explaining intermodalism and how it is utilized in the transportation industry; adequately explaining the NASA transportation cycle as it pertains to large heavy equipment; adequately describing the mission of Ares I and Ares V in their cargo and crew transportation roles; and adequately describing the decision-making and management processes that NASA uses in mission planning.	The student thoroughly grasps the big idea; thoroughly explaining intermodalism and how it is utilized in the transportation industry; completely explaining the NASA transportation cycle as it pertains to large heavy equipment; thoroughly describing the mission of Ares I and Ares V in their cargo and crew transportation roles; and expertly describing the decision-making and management process that NASA uses in mission planning.