### ABET Student Learning Outcomes

- **Engineering Mindset:**
  - The way of being of an engineer that differentiates the engineering profession from all other disciplines (PQCL: Confident, Leverages failures, persists)

- **Tool User:**
  - Identifies tools to improve effectiveness and efficiency, quickly becoming adept at using them

- **Safety Protector:**
  - Minimizes the overall long-term risk of implemented solution as well as during its realization

- **Innovator:**
  - Moves beyond state-of-the-art and finding ways around constraints ("can-do" attitude)

### Profile of a Quality Collegiate Learner Characteristics

- **Solution Producer:**
  - Finds acceptable results that meet the needs of the situation at hand

- **Optimizer:**
  - Constantly seeks greater productivity by reducing costs and increasing efficiency

- **Solution Reuser:**
  - Employs tried and true methods or extends them as needed) to solve problems

- **Decision Maker:**
  - Uses a rational process for selecting & integrating alternatives to obtain the best solution

- **Prototyper:**
  - Explores Engineering ideas through building prototypes or examples of the ideas

### Design

- **An ability to apply the engineering design process to produce solutions that meet specified needs with consideration for public health and safety, and global, cultural, social, environmental, economic, and other factors as appropriate to the discipline.**

- **Concept Developer:**
  - Identifies/constructs novel ideas or approaches or synthesizing and refining existing solutions

- **Specifier:**
  - Defines design outcomes as measurable process or product features, characteristics or tolerances

- **Data Analyst:**
  - Collects, organizes, and transforms data to produce insights through effective data analysis with appropriate statistical tools

- **Analytical Thinker:**
  - Breaks apart entities into constituent parts in order to understand the relationship between the parts

- **Solution Reuser:**
  - Employs tried and true methods or extends them as needed to solve problems

- **Decision Maker:**
  - Uses a rational process for selecting & integrating alternatives to obtain the best solution

- **Prototyper:**
  - Explores Engineering ideas through building prototypes or examples of the ideas

- **Unit Analyst:**
  - Uses physical dimensions in mathematical operations to contextual phenomena

### Experimentation

- **An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.**

- **Technician:**
  - Selects and systematic uses research methods and instrumentation to best pursue the inquiry questions

- **Scientist:**
  - Observes phenomena to identify patterns leading to hypothesis formulation

- **Researcher:**
  - Develops the set of compelling and relevant inquiry questions
Algorithmic Thinker
Represents processes in a step by step manner along with appropriate logic statements

Client Advocate
Identifies and addresses the needs of the client, deferring own interest in lieu of client interests

Quality Specialist
Constantly assessing process and products to find ways for improvement in current and/or next iteration

Debugger
Identifies and corrects root causes of unexpected results and undesirable outcomes

Operations Manager
Monitors implementation activities to elevate process quality and eliminate waste

Product Tester
Validates solutions to ensure that quality meets target specifications

System Thinker
Reduces real world physical/social situations into simplified representations that promote thinking about system behavior

Mathematical Modeler
Develops coherent models that quantitatively describe real-world phenomena based on governing equations

Ethical Reasoner
Understands professional code of conduct and acts on its underlying values with societal norms

Documenter
Documents information, results, processes, and reflections for future use by different stakeholders

Project Leader
Steps up to organize teams that move projects/initiatives forward

Algorithmic Thinker
Represents processes in a step by step manner along with appropriate logic statements

Process Engineering
An ability to see details of how processes are used to produce products/results, correct errors, eliminate waste in order to ensure consistent quality.

Electrical Engineering Professionalism
An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts. (PQCL: committed to success, manage frustrations, plans, work hard)

Debugger
Identifies and corrects root causes of unexpected results and undesirable outcomes

Operations Manager
Monitors implementation activities to elevate process quality and eliminate waste

Product Tester
Validates solutions to ensure that quality meets target specifications

Issue Clarifier
Parses a contextual situation to identify all the significant factors influencing that situation to understand inputs and outputs

System Thinker
Reduces real world physical/social situations into simplified representations that promote thinking about system behavior

Mathematical Modeler
Develops coherent models that quantitatively describe real-world phenomena based on governing equations

Simulator
Varies parameters in system models to discern relative significance of different configurations/inputs

System Integrator
Combines and interfaces subcomponents to ensure larger system integrity

Engineering Learning Performance
An ability to recognize the ongoing need to acquire new knowledge, to choose appropriate learning strategies, and to apply this knowledge. (PQCL: clarifies expectations, master learner, self-assess)

Communicator (from PQCL)
An ability to communicate effectively with a range of audiences.

Team Player (from PQCL)
An ability to function effectively as a member or leader of a team that establishes goals, plans tasks, meets deadlines, and creates a collaborative and inclusive environment.

Additional ABET Student Learning Outcomes from Profile of a Quality Collegiate Learner

Communicator (from PQCL)
An ability to communicate effectively with a range of audiences.

Team Player (from PQCL)
An ability to function effectively as a member or leader of a team that establishes goals, plans tasks, meets deadlines, and creates a collaborative and inclusive environment.