Introduction to Engineering

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- Qualities of an Engineer
  - Strong Analytical Skills
  - Practical Ingenuity
  - Creativity
  - Communication
  - Understand Principles of Leadership
  - High Ethical Standards
  - Dynamism, Agility, Resilience, and Flexibility
  - Lifelong Learner
- What is Problem Solving?
  - Problems are at the center of what many people do at work every day
    - *e.g.* Solving a problem for a client
    - Supporting those who are solving problems
    - Discovering new problems to solve
  - Being a confident problem solver is really important to your success in your career
  - We need a good process to use $\Rightarrow$ Engineering Design Process (EDP)
- What is Engineering Design?
  - Intelligent Process $\rightarrow$ Learn and improve
  - Find a solution that:
    - Achieves user needs $\rightarrow$ Identify the user and their needs
    - Meets client's objectives $\rightarrow$ Identify the client and the objectives
    - Meets defined constraints $\rightarrow$ Identify and evaluate the constraints based on client requirements

– We will follow: Problem → Define → Generate → Decide → Implement → Evaluate

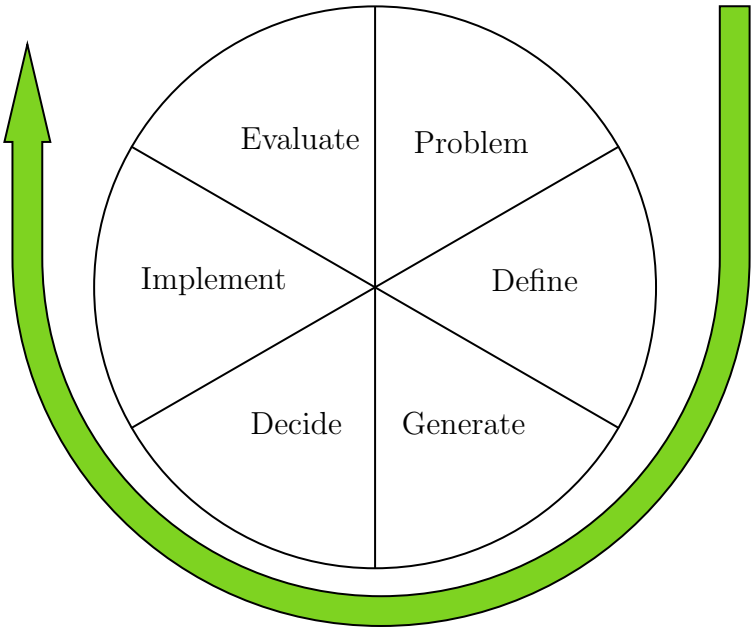

Figure 1: The Engineering Design Process (EDP)