Analyzing Technology as Systems
- Systems Thinking
- Understanding / Considering Protocols, Interfaces, & Standards
- Understanding / Considering Processes & Procedures
- Considering Controls

Managing Technology Projects
- Planning
- Estimating Effort & Time
- Recognizing Resources
- Project Management
- Considering Cost Constraints
- Breaking the Problem Down
- Considering “Good Enough” or “80%” Solutions
- Prioritizing

Creating / Selecting New Technology
- Analyzing Tradeoffs
- Clarifying the Problem or Need
- Researching Other Solutions
- Brainstorming Solutions
- Prototyping
- Simulating
- Designing Within Requirements
- Breaking the Problem Down
- Considering “Good Enough” or “80%” Solutions

Making Existing Technology Work (Or Work Better)
- Troubleshooting
- Characterizing
- Optimizing & Improving
- Maintaining & Operating
- Calibrating

Other Critical Thinking Skills
- Lateral Thinking
- Estimation (Back-of-the-Envelope and Order-of-Magnitude)

Communication
- Communicating Work Informally
- Presenting Formally
- Documenting Work for Self and Team
- Writing for Publication and Presentation

CRITICAL ENGINEERING TECHNOLOGY SKILLS & EXPERIENCES
- Making Existing Technology Work (Or Work Better)
- Creating / Selecting New Technology
- Managing Technology Projects
- Analyzing Technology as Systems

ENGINEERS’ PROFESSIONAL SKILLS
- Communication
- Analyzing Technology as Systems
- Managing Technology Projects

ENGINEERS’ WAYS-OF-THINKING
- Other Critical Thinking Skills

Valued Hawaii STEM Workforce Skills


©Institute for Scientist & Engineer Educators