



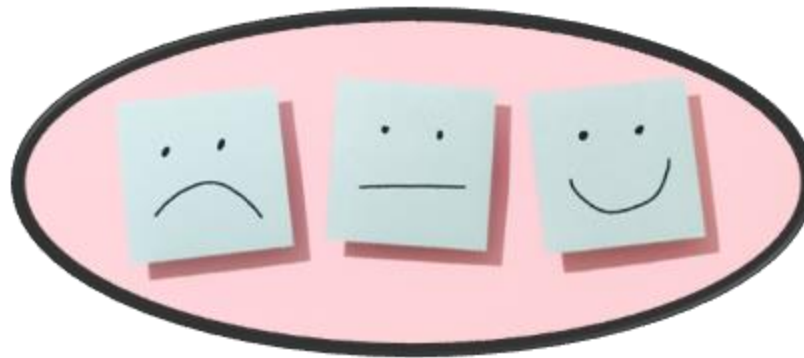
# CRITIQUE

Noun:

a **careful judgment** in which you give your opinion **about the good and bad** parts of something (such as a piece of writing or a work of art)

Verb:

to **express your opinion about the good and bad** parts of (something) : to give a critique of (something)



Source: Britannica. (2023). Critique. In *Britannica Dictionary*. Retrieved from <https://www.britannica.com/dictionary/critique>

## Critique

- By an **expert** with more **objective** comments from **technical** perspective
- To provide constructive advice and suggestions to help the worker or creator improve the work or creation
- Product of analysis that responds to, interprets, makes judgment

## Review

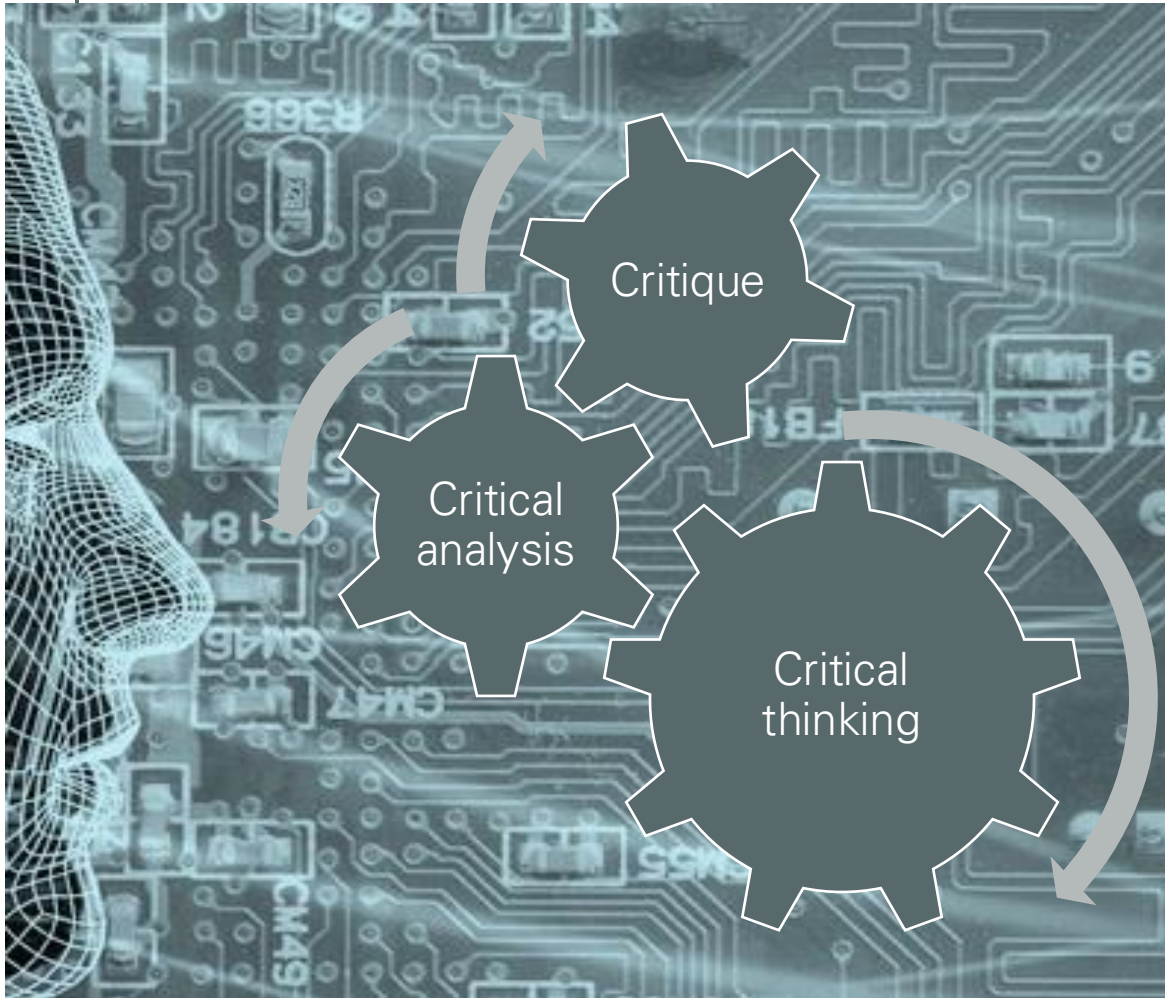
By a **layperson** with **subjective** opinion from **non-technical** perspective

## Criticism

To find fault with a piece of work or creation and to place blame on the worker or creator

## Critical Analysis **Tool**

Process of analysis that leads to a critique



## Engineering Reasoning Framework

- Critical thinking
- Objectives
- Assessment
- Format



## Introduction



Analyze situation

Identify engineering problem

Design solution

Critical Thinking Skills

**DEVELOP**

**HONE**

**SHARPEN**

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## Introduction: Critical Thinking

analyzing

evaluating

synthesizing  
information



This image is from <https://depositphotos.com/stock-photos/cognition.html>

## **Practice & Reflection**

questioning assumptions

examining evidence

considering alternative perspectives

weighing implications of different  
options

**reasoned judgments**

**informed decisions**

## Introduction: **Critical Thinking in Engineering & Design**



- Navigate the complexities of design challenges
- Make well-informed choices

- Identify potential problems
- Evaluate different design options
- Anticipate consequences
- Assess the feasibility and sustainability of the solutions



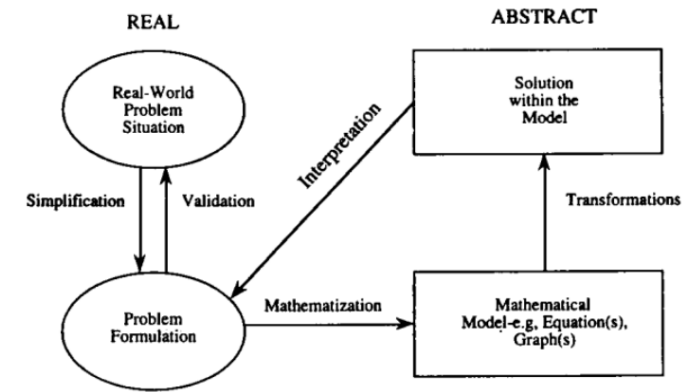
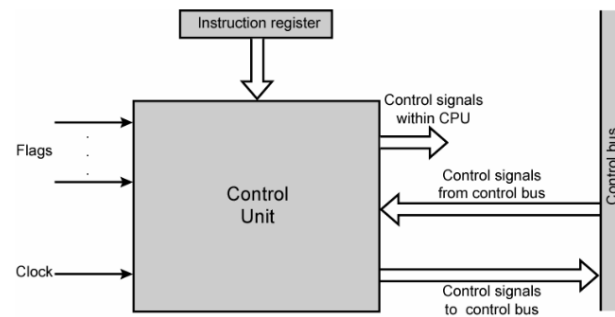
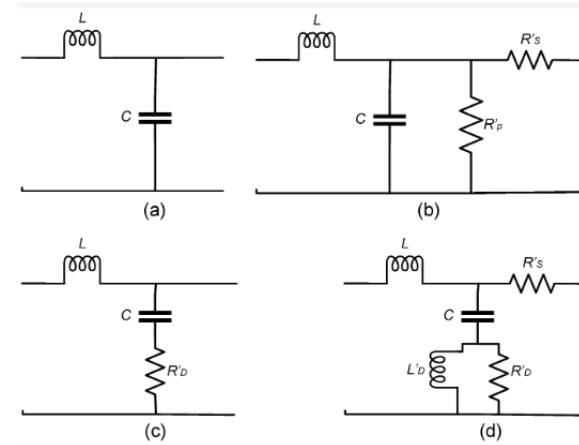
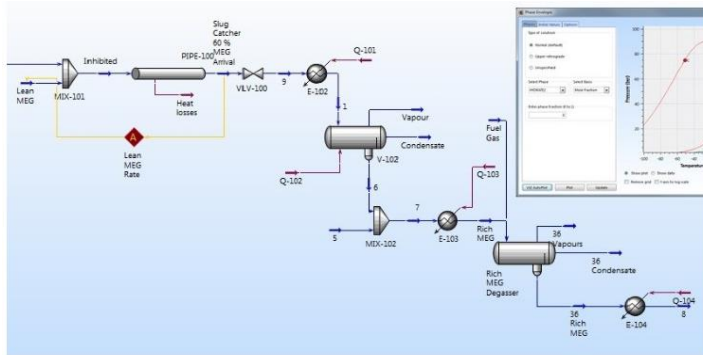
<https://think360studio.com/blog/how-to-identify-the-tech-product-design-problems>

## Objective

Critically analyze **ideas** in engineering and design



# Engineering Reasoning Framework



## Objective

Critically analyze ideas in engineering and design

Engineering reasoning framework

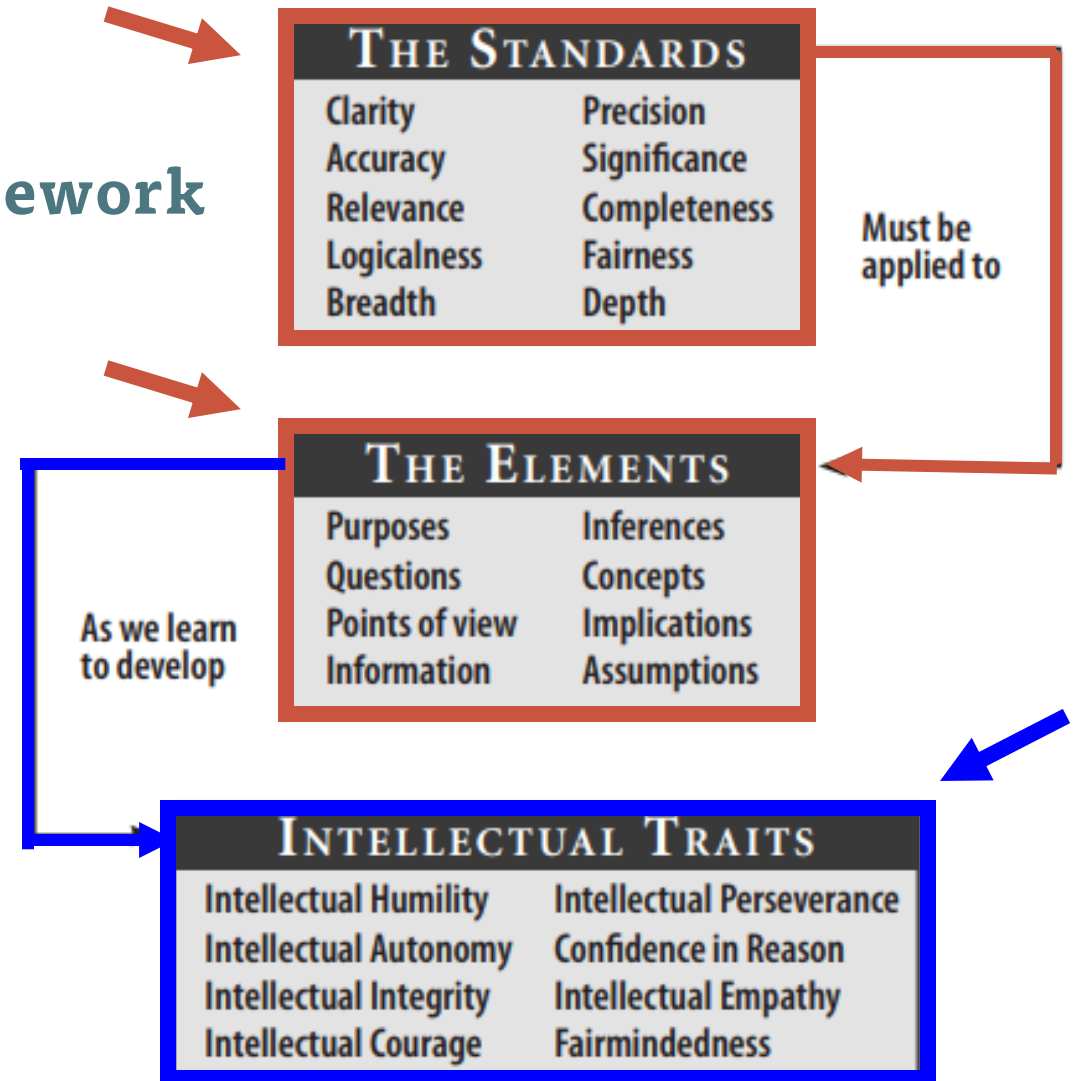
# Engineering Reasoning Framework

Paul and Elder's  
critical thinking framework



Engineering reasoning framework

Systematic and comprehensive



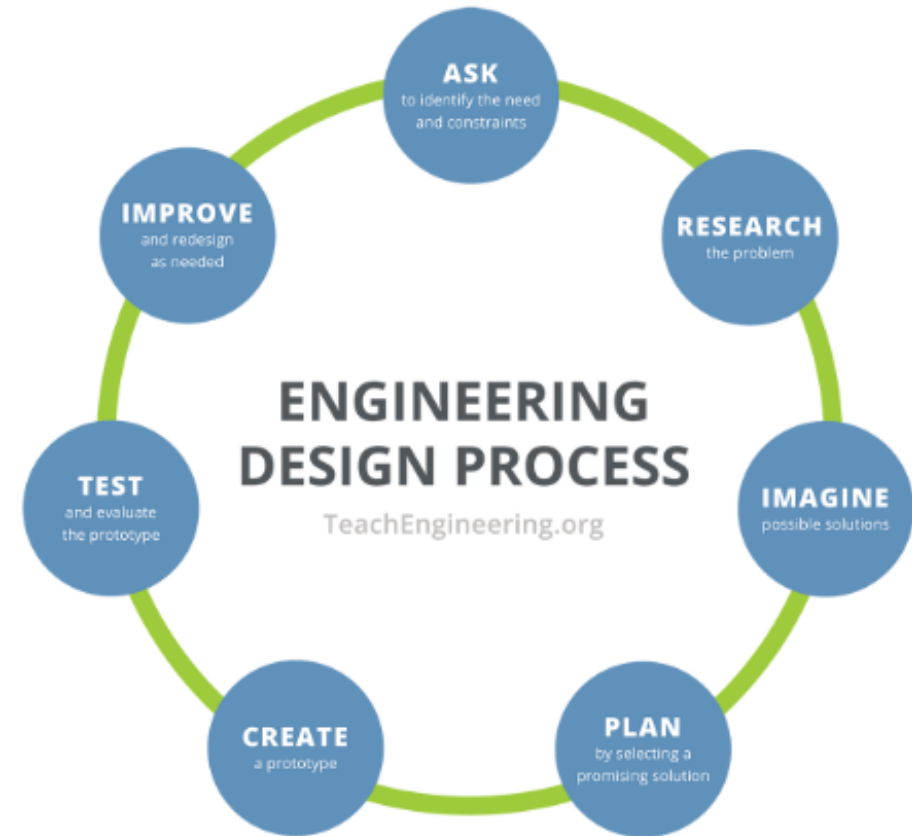
## Objectives

- **Critically analyze ideas** in engineering and design;
- Work effectively in a team to **develop and present** an engineering **conceptual design**;
- Engineering reasoning framework
- Engineering design

# Engineering Design

## Engineering design principles and process

- General principles of engineering design
- 7 steps of engineering design process



Engineering, University of Colorado Boulder. (n.d.)



## Objectives

- **Critically analyze ideas** in engineering and design;
- Work effectively in a team to **develop and present** an engineering **conceptual design**;
- **Understand** academic conventions and apply them to **communicate** critical thought in a **clear and coherent** manner.
- Engineering reasoning framework
- Engineering design
- Academic conventions

## **Academic Conventions**

Selection and acknowledgement of academic sources

Linguistic features of academic writing:

- verb tense
- reporting verbs
- booster and hedges
- active and passive voice
- signposting

## Assessment

Through individual and group work, as follows:

### Group (30%)

- **A1: Team oral presentation** of engineering conceptual design project [10 min + 5 min Q&A] - 30%

### Individual (70%)

- **A2: Critique** of engineering conceptual design [500-600 words] - 25%
- **A3: Critique** of engineering case study [500-600 words] – 25%
- **5 Quizzes** [10 MCQs] – 10%
- **Participation** - 10%



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## Quizzes (10%)

- Each quiz consists of 10 MCQs on a **specific topic** and a total mark of 10.
- Mix of **theoretical** and **applicative** questions.
- Only **ONE attempt** is allowed for each quiz.
- Answers will be provided when the quiz is closed.
- **Each quiz comprises 2%** (5 quizzes together comprise 10%) of the total CA.

## Format

Blended mode of  
teaching and learning

Weekly learning

### Asynchronous



- Online lectures
- Course readings
- Quizzes

### Synchronous


- Tutorial discussions
- Conferencing




# CANVAS




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## NEXT

- E-lecture
- Course reading
- Quiz

See you then!

