

# Mechanism Feasibility Design

Tutorial Session Notes

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# Last Week

## 1. Product Design Specification

- Refresher
- Report Section Guidelines

## 2. Concept Generation

- Present 6 Techniques
- Report Section Guidelines

## 3. Concept Selection

- Present 4 Techniques
- Report Section Guidelines

# Concept Selection

## Controlled Convergence

Devised by Pugh in the 1980s







Matrix comparing requirements and concepts

Select one as a datum

Iterate through each concepts (+, - or s)

Sum values and rank concepts

Check if any concepts could be combined

						
Criteria	Concept 1	Concept 2	Concept 3	Concept 4	Concept 5	Concept 6
Ease of use		+	+	-	-	S
Aesthetic appeal		-	+	+	-	-
Manufacturability		+	+	-	+	+
Low weight		+	-	+	-	+
Energy efficiency		S	+	-	+	+
Safety		-	+	S	-	+
$\Sigma+$		3	5	2	2	4
$\Sigma-$		2	1	3	4	1
$\Sigma S$		1	0	1	0	1
Net Score	0	1	4	-1	-2	3
Rank	4	3	1	5	6	2
Continue or combine?	Combine	Combine	Yes	No	No	Yes

Pugh, S., 1991. *Total design: integrated methods for successful product engineering*. Addison-Wesley.

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## This Week

- Generate three concepts for your mechanism
- Compare them through controlled convergence
- Select a concept to carry forward
- Begin writing the sections of the report
- Blackboard submission
  - PDS
  - Overview of selected concept

# This afternoons lecture



## Systems Modelling

