

Mechanical Design Skills Workshop (MDSW)

Design skills are developed through progressive practice of old skillsets while adding new elements.

This is not a beginner's course in design.

This workshop immerses participants in design considerations, introducing new design content, tying them together with previously known design ideas, while refining graphical communication skillsets.

Content is delivered by the workshop leader, self- and peer-instruction

Participants will select a mechanism design as the basis of their workshop project. They will prepare component and assembly engineering drawings, with appropriate views, dimensions and tolerances. While GD&T instruction is not part of the workshop, participants who have taken appropriate GD&T courses are encouraged to apply GD&T.

At the end of the workshop, participants will present their design and drawings.

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Topics include:

1. CAD skills development (*Estimated CAD Instruction Time Indicated*)
 - a. Sketching (simple, single component only; assemblies not included) (30 minutes)
 - b. Modelling (30 minutes)
 - c. Parametric modelling (30 minutes)
 - d. Assemblies (60 minutes)
 - e. Drafting practices
 - i) Assembly drawings (30 minutes)
 - ii) Drawing views selections (non-CAD instruction)
 - iii) Drawing annotations (options) (non-CAD instruction)
 - non-GD&T for those that have not completed AGC
 - GD&T for those having completed AGC
2. Tolerance Selection (based on ANSI Limits & Fits)
3. Material (primarily metals) Selection
4. Mechanical Fasteners – a general understanding
5. Using Machinery's Handbook as a design resource
 - Projects may be selected from a provided list, or from participants' interests, subject to instructor acceptance.
 - Evaluations will be formative, with no grades assigned.
 - Participants present their design(s) at the end.