

1 - Student Report:

How does the design demo collection aim to help you?
Continue reading for an explanation. What you can look for:

- **Accessibility:** Selected off-the-shelf parts are chosen for high accessibility. If you use these materials, you'll find them easily, frequently, locally, and low cost.
- **Commonization** across time & departments. When you adopt metric 20mm, 30mm aluminum extrusions, this is the best-case likelihood for gaining spare parts from past projects.
- **Gateways to part families.** The included OTS parts come from manufacturers & industries with broad ranges of variations. Students have said "If I had only known these parts existed" then it would save them a whole CAD project or a study of vendors.
- **Lesson-in-model:** you can download many free CAD models but they are not designed for learners. These CAD models have feature trees with intentional sequencing, clear naming, and structure to help you review the CAD model to teach yourself to model alike.
- **Context Examples:** parts are designed to teach a manufacturable design, but they also include (or will include) use-case scenarios with mating parts like screws & loading added for context. We want you to be able to design anything.



2 - Professor Report:

The demonstration should be growing over time and your feedback is welcome. The aim is to offer these characteristics that benefit your courses:

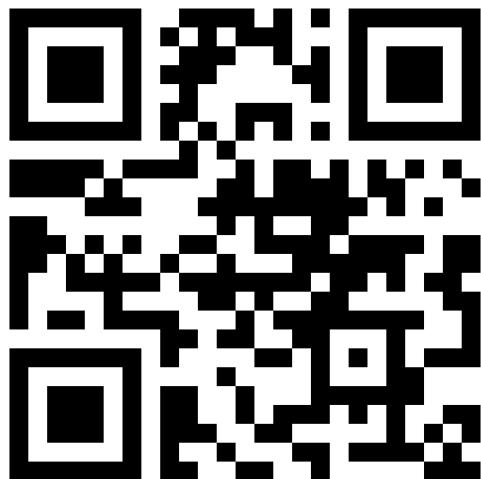
- **Anchored to fundamental concepts:** the parts will include tags and keywords found directly in undergrad-level courses in metallurgy, machine-design and manufacturing.
- **Dynamic examples:** The examples at-hand can easily adjust to fit a need in your course. The four-bar linkage for example is a popular course content. We can readily update the dimensions and create a real-life duplicate of your textbook problem.
- **Scaled for instruction:** the parts are deliberately scaled at sizes and force-magnitudes that fit in academic spaces. For gears and pulleys, the industry may have torque with 50 Kilonewton-meters while our torque is 5 Newton-meters. If students use these parts, it should leverage your on-hand instrumentation & not take up too much space or material.
- **Gateway to electronics:** The demonstration parts support multidisciplinary outcomes. Selected parts give your students (for Mechanical profs) shortcuts to the inclusion of DC power and microcontrollers of popular specifications so they choose an easy path from your classroom to a multidisciplinary system design.



3-Online Knowledge

Visit the links to download parts and find more information. For OpenLab Project, see “Printegrate” section for the writeup on parts in this demo.

qr.net/openlabproject



(above) bonding with steel



(above) attachment for aluminum



(above) battery adapter



(above) joining feature



(above) integration of bearing