COLLABORATIVE ONLINE DESIGN

Using Onshape

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FALL WORKSHOPS

Poll

- Which CAD software has your team used the most or in your last build season?

Poll

- Is your team able to work in the same building currently? If so, at what capacity? i.e. 50% would be “we met for 4 hours a week last year at this time, but only 2 hours a week currently”

Presentation Resources

https://bit.ly/2OUAUDI

What is Onshape

Onshape is….

Google Docs of CAD - **Collaborative**

Free for students/FRC

Automatically updated every 3 weeks

Hardware agnostic - runs on phones, chromebooks, macs, linux and pc

Onshape isn't

CAM software

FEA software

Rendering Package

Offline

Onshape is CAD
Everything else is an addon
(not always free)

Using Onshape

1) **Sharing and Collaboration**
2) Onshape Teams
    a) Part libraries
3) Sample workflow
4) Branching and Merging

Live Demo Follow along - https://bit.ly/2krGCQH

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Sharing and Collaboration

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Benefits of Sharing

- Fast, Easy Remote Collaboration
- Online training and feedback
- Back on Campus?
  - Manufacturing/Assembly benefits
  - Remote collaboration still exists

Remote collaboration

Volunteer?

We need a volunteer to review a part file with Alex and make edits.

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Onshape Teams
And building a part library

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Onshape Teams

- Instantly share files with multiple people, no need to type their names and emails individually
- Takes seconds to set up
- Allows folders to be shared easily - can create libraries of parts

Online Training
Lessons learned so far

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- Learning curve is steep for people who have never used CAD software before
- Many tutorials assume that you have a basic understanding.

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- You can let the learning center do a lot of the teaching, but it helps to meet regularly to answer questions about it.

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- There’s a fine line between telling rookie to figure it out for themselves and giving them the answers.

After you return to the shop

Production team

Onshape can run on your phone

- Manufacturing can see the model
- Can grab any necessary dimensions
- WITHOUT hunting for a designer or **reprinting a drawing**

Remote Collaboration is still necessary

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Using Onshape

Branching and Merging

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Branching and Merging

PROS

Allows for a variety of ideas to be attempted quickly

Allows for a separate “render” branch to be created where all colors/high quality models etc are stored without messing up main assemblies

CONS

Slightly difficult to implement

Can require a strong lead to manage the merge process and deal with issues

Branch and Merge Demo

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Using Onshape

Sample workflow (current 701 process)

For on campus use

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701 workflow

Onshape

Create parts

Create assemblies

Create drawings

→

Export step files

→

Create CAM

Create Renders

Things we like and dislike

Like

- Collaboration
- Essentially no hardware requirements
- Phone app

Feels the same

- Drawings
- Basic features
- Help documentation

Dislikes

- When running Onshape and video conference software it can cause issues on lower powered hardware

Are there any other choices?