ECE 478-578 Intelligent Robotics I

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Overview



Today's Lecture

- What is Fusion 360?
- What is 3D Modeling?
- User Interface, Navigation, Keyboard Shortcuts
- Creating Simple 3D Models
- Sketching and Modifying Tools
- Dimensions and Constraints
- Parametric Design
- Timeline
- Fillets and Chamfers
- Save and Share Design



What is 3D Modeling?



What is 3D Modeling?

- The process of developing a mathematical representation of any surface of an object in three dimensions via specialized software.
- For us it means use of software to create a virtual threedimensional model of some physical object.
- The product of this process is called a 3D model.



What is Fusion 360?



Fusion 360

- Fusion 360 is a cloud-based CAD/CAM/CAE tool for collaborative product development.
- Fusion 360 combines fast and easy organic modeling with precise solid modeling, allowing you to make your designs manufacturable.





What can you do with Fusion 360?

- Concept and Design with Sculpting
- Parametric Design and Mechanical Drawings
- Renderings and Animation
- CAM (Computer Aided Manufacturing)
- Simulation



User Interface, Navigation, Keyboard Shortcuts





Navigation

Mouse

 SCROLL
 Scroll the middle mouse wheel to zoom in or zoom out.

 HOLD
 O
 Click and hold the middle mouse button to pan the view.

 SHIFT
 O
 Hold the SHIFT key and click and hold middle mouse button to orbit the view.



Keyboard Shortcuts





Creating Simple 3D Models



Creating Primitive Models









Sketching Tools





Dimensions and Constrains



Dimensions and Constrains

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Symmetry





Parametric Design



Parametric Design

- Parametric modelling is a method where you use parameters to set the dimensions of part or all of your model, so you can go back and change the parameters.
- The model will then change accordingly while still keeping its integrity intact.





Timeline



Timeline





Fillets and Chamfers



Fillet and Chamfer





Save and Share Designs



Demo Design





