



# CAD Solid Model Design: An Introduction (LLART 432)

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**Course Overview:** Learn everything you need to know to start modeling your own functional parts in a Computer Aided Design (CAD) program. We will be utilizing Autodesk's Fusion 360 platform, so you'll be able to continue modeling your own parts from home! You'll learn about the different types of CAD files, viewport navigation, importance of order of operations, making and constraining a sketch, extruding your sketch (adding and removing material), modifying an existing solid model with your own customizations, pattern/mirror features for efficient modeling, fillet/chamfer features for finishing parts, assembly feature (multiple parts coming together), and exporting your part for 3D printing.

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**Course Objectives:** By the end of this course, the student will be able to confidently demonstrate the skills below:

1. Creating new files (parts and assemblies)
  2. Sketching 2D objects
  3. Bringing 2D sketches to life (3D!)
  4. Modifying existing 3D parts to make it your own design
  5. Export parts for 3D printing
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**Pre-Course:** Sign up for an autodesk account with your personal email - utilize the link "Get Fusion 360 for personal use". If you have any issues - I can guide you through signing up during the first class.

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**Course Resources:**

- Notebook
- Pencil



Learn more.  
Do more.  
Become more.

| Weekly Plan |  |  |
|-------------|--|--|
| Week        | Session Topic  | Resources  |
| 1           | Intro to CAD<br>-Overview of Course<br>-Capabilities of CAD programs<br>-Exploring Autodesk Fusion 360 | Notebook, Pencil<br><br>*Course Exercises will be provided |
| 2           | 2D Sketching   | Notebook, Pencil<br><br>*Course Exercises will be provided |
| 3           | 3D Design<br>-2D to 3D<br>-3D features   | Notebook, Pencil<br><br>*Course Exercises will be provided |
| 4           | Complex 3D Design<br>-Additional Practice Problems<br>-Intro to Assembly                               | Notebook, Pencil<br><br>*Course Exercises will be provided |
| 5           | Modifying 3D Models<br>-Importing existing models<br>-Creating your own features on existing parts     | Notebook, Pencil<br><br>*Course Exercises will be provided |
| 6           | Finishing a Model<br>-3D print exports   | Notebook, Pencil<br><br>*Course Exercises will be provided |

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**University Safety Statement.** The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, call campus police at 801-585-COPS (801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit [safeu.utah.edu](http://safeu.utah.edu).

**Addressing Sexual Misconduct.** Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a civil rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran's status or genetic information. If you or someone you know has been harassed or assaulted, you are encouraged to report it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to the police, contact the Department of Public Safety, 801-585-2677(COPS).

**Undocumented Student Support Statement.** Immigration is a complex phenomenon with broad impact – those who are directly affected by it, as well as those who are indirectly affected by their relationships with family members, friends, and loved ones. If your immigration status presents obstacles to engaging in specific activities or fulfilling specific course criteria, confidential arrangements may be required from the Dream Center. Arrangements with the Dream Center will not jeopardize your student status, your financial aid, or any other part of your residence. The Dream Center offers a wide range of resources to support undocumented students (with and without DACA) as well as students from mixed-status families. To learn more, please contact the Dream Center at 801.213.3679 or visit [dream.utah.edu](http://dream.utah.edu).