

Resources for Mechanical Engineers

1. 20 SaaS-based Software for Mechanical Engineers

- SolidWorks
- AutoCAD
- Fusion 360
- CATIA
- PTC Creo
- Onshape
- ANSYS
- MATLAB
- Simulink
- Solid Edge
- Inventor
- SimScale
- COMSOL Multiphysics
- HyperWorks
- Abaqus
- MSC Nastran
- FloTHERM
- Simcenter
- KeyCreator
- Autodesk CFD

2. Tutorial Links to Learn How to Develop These Software

SolidWorks Tutorial: <https://www.solidworks.com/sw/resources/getting-started.htm>

AutoCAD Tutorial: <https://www.autodesk.com/solutions/autocad-tutorials>

Fusion 360 Tutorial: <https://www.autodesk.com/products/fusion-360/learn-training>

CATIA Tutorial: <https://www.3ds.com/products-services/catia/resources/>

PTC Creo Tutorial: <https://www.ptc.com/en/technologies/cad/creo/creo-tutorials>

Onshape Tutorial: <https://www.onshape.com/en/resource-center/learn>

ANSYS Learning: <https://www.ansys.com/services/training-center>

MATLAB Tutorial: <https://www.mathworks.com/learn/tutorials/matlab-onramp.html>

Simulink Tutorial: <https://www.mathworks.com/learn/tutorials/simulink-onramp.html>

Solid Edge Tutorial: <https://solidedge.siemens.com/en/learning/youtube-tutorials/>

Inventor Tutorial: <https://knowledge.autodesk.com/support/inventor/getting-started>

SimScale Learning Center: <https://www.simscale.com/docs/>

COMSOL Learning Center: <https://www.comsol.com/support/learning-center>

HyperWorks Learning Center: <https://altairhyperworks.com/TrainingCourseList.aspx>

Abaqus Tutorial: <https://www.3ds.com/products-services/simulia/support/training/>

MSC Nastran Training: <https://www.mscsoftware.com/services/training>

FloTHERM Learning:

<https://www.mentor.com/products/mechanical/products/flotherm/>

Simcenter Learning: <https://www.plm.automation.siemens.com/global/en/our-story/training/simcenter.html>

KeyCreator Tutorial: <https://kubotek3d.com/products/keycreator/learning>

Autodesk CFD Tutorial: <https://knowledge.autodesk.com/support/cfd/getting-started>

3. Sponsored Research Opportunities for Mechanical Engineers

NSF Engineering Research Programs:

https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505743

American Society of Mechanical Engineers (ASME) Grants:

<https://www.asme.org/about-asme/get-involved/research>

National Institute of Standards and Technology (NIST) Grants:

<https://www.nist.gov/topics/grants-contracts>

Department of Energy (DOE) Research Grants: <https://www.energy.gov/science/office-science-grants-and-contracts>

Defense Advanced Research Projects Agency (DARPA) Grants:

<https://www.darpa.mil/work-with-us/opportunities>

National Aeronautics and Space Administration (NASA) Research Grants:

<https://nspires.nasaprs.com/external/>

Environmental Protection Agency (EPA) Research Grants:

<https://www.epa.gov/research-grants>

Office of Naval Research (ONR) Grants: <https://www.onr.navy.mil/en/work-with-us/funding-opportunities>

American Institute of Aeronautics and Astronautics (AIAA) Research Grants:

<https://www.aiaa.org/get-involved/advancing-your-career>

Society of Automotive Engineers (SAE) Grants: <https://www.sae.org/research>

National Science Foundation (NSF) Manufacturing Machines and Equipment Grants:

https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13346

National Renewable Energy Laboratory (NREL) Research Grants:

<https://www.nrel.gov/workingwithus/funding-opportunities.html>

Air Force Office of Scientific Research (AFOSR) Grants:

<https://www.wpafb.af.mil/afrl/afosr/>

United States Geological Survey (USGS) Grants: <https://www.usgs.gov/working-with-us/grants-and-cooperative-agreements>

National Institute of Health (NIH) Bioengineering Research Grants:

<https://www.nih.gov/grants-funding>

American Chemical Society (ACS) Petroleum Research Fund Grants:

<https://www.acs.org/content/acs/en/funding.html>

American Welding Society (AWS) Research Grants:

<https://www.aws.org/foundation/page/research-fellowships>

American Institute of Chemical Engineers (AIChE) Grants:

<https://www.aiche.org/community/awards/sponsored-awards>

National Academy of Engineering (NAE) Grants:

<https://www.nae.edu/Activities/Projects.aspx>

U.S. Army Research Laboratory (ARL) Grants:

<https://www.arl.army.mil/www/default.cfm?page=8>

4. Industrial Research Opportunities for Mechanical Engineers

General Electric (GE) Research: <https://www.ge.com/research>

Siemens Research: <https://new.siemens.com/global/en/company/innovation/research-and-development.html>

Ford Motor Company Research: <https://corporate.ford.com/innovation.html>

Boeing Research & Technology: <https://www.boeing.com/boeingresearchtechnology/>

Lockheed Martin Research: <https://www.lockheedmartin.com/en-us/what-we-do/research.html>

Honeywell Research:

<https://www.honeywell.com/us/en/company/initiatives/innovation>

United Technologies Research Center: <https://www.rtx.com/our-company/united-technologies-research-center>

Cummins Research: <https://www.cummins.com/company/technologies-and-innovation>

Caterpillar Research: <https://www.caterpillar.com/en/company/innovation.html>

3M Research: https://www.3m.com/3M/en_US/company-us/all-3m-products/~/All-3M-Products/Innovation/

General Motors Research: <https://www.gm.com/our-stories/technology.html>

Northrop Grumman Research: <https://www.northropgrumman.com/what-we-do/innovation/>

ExxonMobil Research: <https://corporate.exxonmobil.com/Research-and-innovation>

Schlumberger Research: <https://www.slb.com/resource-library/technical-papers>

Rolls-Royce Research: <https://www.rolls-royce.com/innovation.aspx>

Johnson & Johnson Research: <https://www.jnj.com/research-and-development>

ABB Group Research: <https://global.abb/research>

ArcelorMittal Research: <https://corporate.arcelormittal.com/what-we-do/research-and-development>

Sandia National Laboratories: <https://www.sandia.gov/research/>

Lawrence Livermore National Laboratory: <https://www.llnl.gov/research-and-development>