



Robotics engineers work in the science of robotics, or flexible automation. Most robots are "manipulators"—machines devised to function in place of a human. Some robots function as "walking" machines, or teleoperators, using remote control or sensory manipulators. Microprocessors, which are very small computers, direct most robots in their tasks.

Robotics engineers are responsible for designing, testing, and building robots that are productive and safe to operate as well as economical to purchase and maintain. These engineers use computer-aided design and drafting, and computer-aided manufacturing (CADD/CAM) systems to perform their tasks. Robotics research engineers design robotic systems and research methods to manufacture them economically. Robotics engineers who work for robot manufacturers are sometimes called robotics test engineers or automation system engineers. These engineers apply the robotic system to a particular use on a manufacturing assembly line. They also create an integrated environment between people and machinery.

Robotics applications vary widely. Robots are used in the automotive, aerospace, metals, nuclear, mining, textile, and computer industries, among others. The robotics engineer must determine the particular needs of each application and customize the robot accordingly. To do this, robotics engineers must plan the computer programs suitable for the robot installation. They must also prepare specifications for the robot's capabilities as they relate to the work environment. In addition, robotics engineers are responsible for developing cost proposals, efficiency studies, and quality control reports. Most robotics engineers are employed by private robot manufacturers or robot users. Some engineers work in military and space programs. Others work for colleges and universities or vocational and trade schools.

So let's start by browsing a few videos introducing what the job of a Robotics Engineer looks like and answer some guiding questions on the information being presented as we start our exploration into this really exciting and growing field.

Answer these questions in a Word Document <u>after you</u> watch the videos and review the resources.
● What seem to be the basic requirements of getting into Robotics Engineering?
● What does the work environment look like for a Robotics Engineer?
● What do Robotics Engineers spend most of their time doing?
● What would be the best part of the job and the worst part of the job?

Videos -

- <https://www.youtube.com/watch?v=ihOsdC85-gc> NASA Robotics Engineer
- <https://www.youtube.com/watch?v=sUOY3JZ-9C4> NASA Robotics Engineer
- <https://connectedstudios.org/url-zuF2ha7ENUkhXWnhzOFCCGrTnKEgLz4aEQbQNf0MNLjA> select Robotics Engineer
- <https://www.youtube.com/watch?v=G8oWPZ5g9lM> Space Mining with Robots
- <https://www.youtube.com/watch?v=4ImQih8vklc> NASA Space Mining
- <https://www.youtube.com/watch?v=p1HmgP9l4VY> Stanford University Underwater Robot

Sources:

- <http://careers.stateuniversity.com/pages/416/Robotics-Engineer.html#ixzz55JlwGzDy>
- https://study.com/articles/Robotics_Engineer_Job_Outlook_and_Required_Education.html
- <http://blogs.ptc.com/2014/10/30/demand-for-robotics-engineers-grows/>
- <https://www.onetonline.org/link/summary/17-2199.08>
- <http://www.savioko.com/>

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