

### ABOUT THIS OCCUPATION

Robotics engineers design robots, maintain them, develop new applications for them, and conduct research to expand the potential of robotics. This is a rapidly developing field, with advances in computing constantly opening up new possibilities for robotics applications.

The profession offers jobs for a wide range of temperaments. Visionary robotics engineers can work designing experimental mobile robots, with applications ranging from medical and military uses to designs aimed at creating vehicles capable of piloting themselves on other planets. More down-to-earth jobs involve designing new production-line robots, often with programmable arms, and maintaining and upgrading older production-line installations. Somewhere in between lie those engineers designing and producing robots for expanding but tested fields, such as self-piloting crop harvesters and automated nuclear-safety equipment.

(Source from The Princeton Review, <http://www.princetonreview.com>, about careers).

A video about Robotics Engineering is available from ThinkTVPBS, produced January 29, 2009 for the series "Engineering Your Future" and accessed from the website at <http://www.youtube.com/watch?v=umNfDhi0kB0> (12:14 min). Video interviews featuring engineers from the various fields of engineering will give you a behind-the-scenes look at the work these engineers do every day. You'll learn about the challenges they face, why they find it so exciting, and what they did to prepare for their careers. This is part of the Engineering Your Future web curriculum offered by ThinkTV.

### EDUCATION, EXPERIENCE, SKILLS

You generally need at least a bachelor's degree in engineering to enter this field. Because robotics technology draws on the expertise of many different engineering disciplines, engineers who specialize in robotics often have degrees in mechanical, manufacturing, electrical, electronic, or industrial engineering. Some colleges and universities now offer robotics engineering degrees. Robotics courses typically include training in hydraulics and pneumatics, CADD/CAM systems, numerically controlled systems, microprocessors, integrated systems, and logic. It usually takes four to five years to earn a bachelor's degree in engineering. Some colleges offer work-study programs in which students receive on-the-job training while still in school. Most universities that offer robotics courses have well-equipped labs with lasers and CADD/CAM equipment. For most positions and to advance in the field you need a master's or doctoral degree. Robotics engineers must continually upgrade their technical knowledge to keep abreast of new developments in this rapidly changing field.

(Visit this source for more information from the website at State University.com <http://careers.stateuniversity.com/pages/416/Robotics-Engineer.html>)

Robots recently became a popular tool in raising interests in computing for middle and high school students. First year computer science courses at several universities were developed which involves the programming of a robot instead of the traditional software engineering based coursework. Universities offer Bachelors and Masters degrees in the field of robotics. Select Private Career Colleges and vocational schools

offer robotics training to train individuals towards being job ready and employable in the emerging robotics industry.

(Visit this source for more information from the website at [http://en.wikipedia.org/wiki/Robotics#Education\\_and\\_training](http://en.wikipedia.org/wiki/Robotics#Education_and_training))

## CERTIFICATION

The Robotics Certification Standards Alliance (RCSA) is an international robotics certification authority who confers various industry and educational related robotics certifications. The RCSA delivers certification exams, manufacturer hands-on training programs, and products and services to provide members with the ability to keep current by updating their knowledge and / or certifying them with new skills.

Recently the RCSA has crossed over from industrial to the robotics fields of Embedded, Unmanned Land/Air/Sea Vehicles, Autonomous and Vision robots. This cross over has already solidified partners in India now delivering certification to Embedded training and workshops being offered by several companies.

## SALARIES AND TRENDS

The Bureau of Labor Statistics, [www.bls.gov](http://www.bls.gov), estimates that growth in electrical engineering will be six percent between 2006 and 2016 whereas electronics engineers will enjoy growth in their demand of four percent during the same period. Robotics Engineers can work in both fields, for large companies or in consulting positions. Most heavy and manufacturing industries require the specialized skills of Robotics Engineers, offering them the opportunity enter an industry when it grows or leave when it contracts. Robotics Engineers with a graduate degree, a solid grasp of programming, mechanical aptitude and advanced electronics skills will enjoy the most opportunities in their field. (Source and for more information, visit the website [http://degreedirectory.org/articles/Robotics\\_Engineer\\_Career\\_Definition\\_Job\\_Outlook\\_and\\_Training\\_Requirements.html](http://degreedirectory.org/articles/Robotics_Engineer_Career_Definition_Job_Outlook_and_Training_Requirements.html))

Robotics Engineers typically hold a Bachelor of Science in Electrical Engineering, a Bachelor of Science in Mechanical Engineering, a Bachelor of Science in Robotics Engineering or a higher degree when working in research or management positions.



<http://www.indeed.com/> and search for "robotics engineer"

