How has mechanical engineering changed over the years?

Engineering

Those systems include aerospace, automotive, marine, manufacturing, bohemianism, power generation, heating ventilation, air conditioning and robotics. They also work in emerging industries such as nanotechnology and particle technology. Mechanical engineers work with conventional fuel sources but they are increasingly developing alternative fuel sources such as geothermal, wind, tide, solar and hydroelectric energy. What kind of high school students should major in mechanical engineering?

Any high school student with an aptitude for mathematics and physics has the basic foundations to be a successful mechanical engineering major. If the student is creative, with a natural curiosity about how things work, coupled tit a desire to build tangible devices, mechanical engineering could be in his or her future. Do mechanical engineering majors at NINJA work on hands-on projects? The Mechanical Engineering department here prides itself on the various hands- on projects that our students work on.

Such projects force students to use the principles they learn in the classroom, but they must take that theory and develop a tangible product. Using devices or products that they fabricate in their capstone design courses, our students enter a wide range of national sign contests sponsored by the American Society of Mechanical Engineers and the Society of Automotive Engineers. Those contests include a Mini-Baja (an all-terrain vehicle) contest; an Indy Car (a Formula speed car) contest; and an Rear-Design (a remote-controlled aircraft) contest.

How has mechanical engineering changed over the years? Though still a very hands-on field, mechanical engineering has also evolved into a computer-

intensive field. Extensive use of sophisticated analysis software is routinely used by mechanical engineers to aid in the development f products, devices and systems. In addition, the implementation of computer controls and electro-mechanical systems in machines and robotics have made the job of the mechanical engineer even more versatile and broad based. Does NINJA teach students how to use those computer tools?

In our classrooms, the use of computing has become an indispensable design and research tool. Mechanical engineering students have the sophisticated analysis software to create computer simulations. And those simulations prepare our students to quickly and efficiently design real prod cuts, devices and processes. This kind of computing is also used in the analysis and testing in the aerospace and automotive fields, as well as in robotics, manufacturing and energy conversion. Our students are well prepared to work in those industries.

How do you teach mechanical engineering at NINJA? What classes do mechanical engineering majors take? Of all the engineering fields, mechanical engineering students take the widest range of courses. And those courses prepare students for the broadest range of careers. In the area of solid mechanics, mechanical engineering majors take courses in static, dynamics, mathematics of machines, vibrations, strength of materials, manufacturing processes and control systems. In the area of so-called soft mechanics, students take courses in fluid dynamics, thermodynamics and heat transfer.

A number of courses are offered that are related to computer-aided design and manufacturing, as well as a number of hands-on laboratories. An extensive array of elective courses are also offered in areas such as bohemianism, computer-aided engineering, aerodynamics, principles of space flight, plastics as well as polymers and particle technology. Design projects are infused wrought the curriculum, and students do a major design project in their senior year. In addition, we help our students get co-pop and summer internships, so that they graduate with real work experience.

That helps jumpstarted their careers. Do mechanical engineers work in teams? The team approach is implemented throughout the educational experience of our mechanical engineering students. Mechanical engineers work extensively in large inter-disciplinary teams, so our students must be trained to work together. Their broad based-education and training make them valuable sets in any engineering project. In fact, mechanical engineers often take leadership roles in projects due to their broad- based approach to engineering design and development.

What are the main industries in which mechanical engineers work? Mechanical engineers work in the widest range of industries, more so than any other kind of engineer. They work in the aircraft and aerospace industries, the automotive industry, as well as in the fields of marine systems, heating ventilation and air conditioning, robotics, bohemianism, power generation and general manufacturing. New emerging industries such as nanotechnology and particle technology are major employers of

mechanical engineers. What are some other career paths that mechanical engineers take?

Many mechanical engineers opt to continue their educations and earn Masters and PhD in engineering. Those degrees prepare them for research careers in industry or at a university. However, with the general educational background offered by the mechanical engineering curriculum and the rigorous analytical skills acquired during that training, many of our students find careers in a did range of professional disciplines. Those areas include intellectual property law, medicine, financial markets and consulting.

Do mechanical engineers move into management positions? As I said earlier, by virtue of our students' broad-based education, they naturally make effective leaders. They understand the overall view of projects and have sufficient mastery of engineering principles from all disciplines to supervise such projects. Historically, mechanical engineers have been industry leaders in the widest range of businesses. Are mechanical engineers well paid? They are. Starting salaries average about $55, 000.