AERONAUTICAL ENGINEERING Wallace H. Coulter School of Engineering

"Technology Serving Humanity"

Selecting a program at Clarkson that includes both the fundamental engineering skills necessary for success as well as affording the opportunity to participate in cuttingedge research was easy."

> Douglas Streibich '05 Mechanical and Aeronautical Engineering

Clarkson UNIVERSITY *defy* convention

What is Aeronautical Engineering?

Aeronautical Engineering is a specialized yet highly diverse career that encompasses challenging areas such as aircraft design, light-weight structures, stability and control of aerospace vehicles, propulsion systems, and low and high speed aerodynamics.

What kinds of careers are possible?

Aeronautical Engineering careers include tasks ranging from airframe design, wind tunnel testing, engine design and testing, and flight testing of new vehicles, to the design of airliner cabin comfort systems.

Career opportunities exist with large companies, such as Lockheed-Martin, Boeing, Pratt and Whitney, and General Electric, or smaller ones such as Cessna or Bombardier Aerospace, as well as government agencies such as the National Aeronautics and Space Administration (NASA) or a national laboratory.

Why Clarkson for engineering?

The placement rate for our engineers is one of the nation's highest. U.S. News & World Report ranks Clarkson in its 2006 Best Undergraduate Engineering Programs at schools whose highest degree is a Ph.D. Our graduates are sought both for their strong technical skills and their versatility. A Clarkson engineering education builds your abilities in teamwork, management, communication and creative problem solving. Our graduates are accepted in the best advanced degree programs in the country, including our own. Among others: Berkeley, Cal Tech, Dartmouth, Illinois, Michigan, MIT and Standford.

A teaching emphasis in a research environment

Clarkson combines two distinctive strengths that benefit students: personalized teaching and high-powered research. With a 16:1 faculty-to-student ratio, our professors get to know students as individuals. On the other hand, these faculty members also conduct research in areas of vital importance in aeronautical engineering — and sometimes involve undergraduates in the process.

Project-based learning

Clarkson takes a project-based approach to learning. Because you focus on the creative application of knowledge and skills to solve practical, real-world problems, you gain:

- A strong, hands-on foundation in the basics
- Teamwork and leadership skills
- Practice in creative problem solving
- Techniques in research and analysis
- Skills in applying what you know

And at all levels, you enjoy the individualized attention that only an undergraduatecentered school can provide.

Aeronautical Engineering: A dynamic program

If your goal is simply to earn a bachelor's degree with minimal effort so that you get a job that pays a lot of money, then Clarkson is *not* the place for you. However, if your goal is a challenging education with opportunities to develop your skills — and character — to a professional level before you graduate, then Clarkson *is* the place for you.

You'll benefit from opportunities in a wide range of activities, including:

- Joining the Design, Build and Fly team (www.clarkson.edu/speed/teams/ designbuildfly.html)
- Conducting research with faculty
- Becoming a member of the Clarkson Student Chapters of the American Institute of Aeronautics and Astronautics and the American Society of Mechanical Engineers
- Working in industry through the Clarkson Cooperative Education Program

- Participating in the Study Abroad Program
- Pursuing an Aeronautical-Mechanical Engineering double major

A practical curriculum

Our curriculum prepares you to tackle professional challenges associated with the design and manufacture of aircraft and related systems. The first two years cover mathematics, physics, chemistry and foundation engineering courses. In the third and fourth years, you take courses in specialized areas such as aerodynamics and flight mechanics. During the senior year, every student plays a role on a design team in a two-semester course in which the team designs an aircraft.

Team competitions in engineering design

Students may also build professionally vital skills by participating in team competitions through Clarkson's program called SPEED (Student Projects for Engineering Experience and Design). You may choose among 15 different design projects involving complex, real-world problems that you tackle in hands-on, multidisciplinary competitions. The program was recognized by Boeing with The Outstanding Educator Award.

Those of particular interest to aeronautical engineering students include:

- Design, Build and Fly
- Formula SAE
- Mini-Baja
- Clean Snowmobile

Professional specializations

Concentrations are available in Manufacturing Engineering, Materials Engineering, and Biomedical and Rehabilitation Engineering. Successful completion is recognized by a Dean's Certificate. Minors are also available in areas such as mathematics and physics.

Faculty research areas

The faculty's diverse research interests and broad professional experience bring a unique flavor and strength to the aeronautical curriculum. Areas of active research include:

- Smart materials and composites
- Aircraft design
- Aerodynamics
- Turbomachinery endwall design
- Computational fluid dynamics
- Renewable energy systems

Undergraduate research

Some summer research assistantships are available to qualifying undergraduates because Clarkson has joined Cornell University as a member of the New York Space Grant Consortium, sponsored by The National Aeronautics and Space Administration. The Honors, CSTEP, and McNair programs also include research opportunities.

- Aeroelasticity
- Unmanned aerial vehicles

What kinds of equipment can I use?

You will perform experiments requiring the use of wind tunnels and material testing systems. You will also have access to a complete machine shop and welding room area and our 7,000-sq.-ft. Multidisciplinary Engineering and Project Laboratory and the Computer and Design Lab equipped with CAD/CAM and GIS. Our latest addition is a stereolithography rapid prototyping system. These are located in Clarkson's Center for Advanced Materials Processing (CAMP).

Co-ops and internships

Through our Career Center, you can participate in a paid, on-the-job experience as a co-op student or intern at companies such as Pratt & Whitney or General Dynamics.

Companies recruiting Clarkson aeronautical engineers

Among the companies that recruit our aeronautical engineering graduates:

- B.F. Goodrich
- Boeing
- General Dynamics
- General Electric
- Lockheed Martin
- Pratt & Whitney

www.clarkson.edu/mae

Location — Historic Potsdam, N.Y. (Pop. 9,500), near the Adirondack Mountains and St. Lawrence River Campus — 640 wooded acres, 47 buildings Enrollment — 2,648 undergraduates, 397 graduate students Students — Men and women from 34 states and 40 countries; 70% from the top quarter of their high school class Faculty — 190 Student/faculty ratio — 16:1 Academics — Business, Engineering, Health Sciences, Liberal Arts, Physical Therapy, Sciences Activities — More than 80 clubs Sports — 21 varsity and 9 intramural sports Financial Assistance — 90% of all students receive some form of financial aid SCHEDULE A VISIT 1-800-527-6577 315-268-6479/6480 admission@clarkson.edu www.clarkson.edu/admission Fax 315-268-7647

Office of Undergraduate Admission Clarkson University PO Box 5605 Potsdam, NY 13699-5605

EQUAL OPPORTUNITY POLICY — Clarkson University does not discriminate on the basis of race, gender, color, creed, religion, national origin, age, disability, sexual orientation, veteran or marital status in provision of educational opportunity or employment opportunities.