Give Your Career that UF EDGE

Professional engineers can earn a master's degree at a time and place convenient to them through programs from UF EDGE (University of Florida Electronic Delivery of Graduate Engineering). UF EDGE helps technical professionals update core knowledge in their engineering disciplines, learn about emerging technologies, and acquire new skills in related engineering areas.

Enrollment Options
Qualified students can begin classes by registering as a non-degree student for the following term. Consult the departmental graduate advisor about procedures for non-degree status and for transferring non-degree credits earned to a regular degree program.

For More Information
The UF EDGE Web site offers extensive information about our programs, as well as the application and registration process. Visit http://ufedge.eng.ufl.edu to:
• Sign up for a free online preview to sample a course
• Use the “Contact us” link to get further information regarding course content and ask specific questions

For current information about tuition and financial aid, visit the UF Graduate School Web site at http://gradschool.rgp.ufl.edu/

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Florida’s Best Engineering College

The UF College of Engineering is ranked as the #1 engineering college in Florida and as one of the top 25 in the nation by U.S. News & World Report magazine. Our faculty is recognized internationally for doing cutting-edge research. They bring their expertise and enthusiasm into the classroom to provide students with the most up-to-date knowledge in the field.

Learn Anywhere, Anytime

UF EDGE brings this exciting learning experience to a worldwide audience of place-bound engineers through a variety of distance learning technologies accessible at the workplace, home, and other sites. UF EDGE programs are delivered either via streaming video or DVD directly to the student. These are the same courses taught by University of Florida College of Engineering faculty on campus. Courses are supplemented by additional course material and interaction.

The degree can be completed in as little as 24 months.

Master Degrees Do Pay Off

A master's degree in engineering can be worth $2.5 million over the course of your career, according to a recent U.S. Commerce Department Census Bureau study that compares educational level to work-life earnings.

The investment of time and tuition dollars toward a master's degree can bring a terrific return in total income. Starting salaries for engineers with a master's degree can be $8,000-$10,000 higher than for those with only a bachelor's degree. Over a lifetime, the income advantage of a master's degree averages more than $400,000.

Admission

Admission is coordinated by the Mechanical & Aerospace Engineering department.

Applicants must have:
• A bachelor of science degree in mechanical or aerospace engineering with a cumulative undergraduate GPA of at least 3.0 on a 4.0 scale
• Satisfactory scores on the general portion of the Graduate Record Examination (GRE) with a minimum score of 1100

For international students whose first language is not English, a minimum score of 600 on the Test of English as a Foreign Language (TOEFL) is required to be excused from English language course requirements.

Curriculum for the Master of Science Degree in Mechanical & Aerospace Engineering

Master’s degree programs offered through UF EDGE are non-thesis. A non-thesis master's degree requires the completion of ten 3-semester credit hour courses as outlined in the degree curriculum. A minimum cumulative GPA of 3.00 is required for graduation.

Dynamics and Control

Fall

EML 5215 Analytical Dynamics I (3)
Analytical methods of statics and dynamics. Principle of virtual work, holonomic and nonholonomic constraints. Lagrange equations for constrained and unconstrained Systems Conservation laws, stability analysis by perturbation about steady state, Jacobi First Integral, generalized impulse and momentum

EML 6281 Geometry of Mechanisms and Robots I (3)
Development of applications to basic theory of the mathematics required in the design of spatial mechanisms and robot arms. Examples include mathematical description of the elements of mechanisms and robot arms, namely linkages and joints, their mobility and their analysis.

EML 6521 Principles of Engineering Analysis I (3)

EGM 6341 Numerical Methods of Engineering Analysis I (3)
Finite-difference calculus; interpolation and extrapolation; roots of equations; solution of algebraic equations; eigenvalue problems; least-squares method; quadrature formulas; numerical solution of ordinary differential equations; methods of weighted residuals. Use of digital computer.

Spring

EML 5311 Control System Theory (3)

EML 5223 Structural Dynamics (3)
Vibration analysis and synthesis of continuous and multidegree of freedom lumped parameter systems. Computational and experimental techniques in modal analysis.

EGM 6934 Robust Control Synthesis (3)
Error effects on feedback control. Uncertainty types and representations; model validation; magnitude and bandwidth of weighting functions. Design tradeoffs between performance and stability; mu synthesis; DGK iteration; model reduction; gain scheduling

EAS 6939 Nonlinear Control (3)
This course is an introduction to nonlinear control. It begins reviewing Linear Time-Invariant Control as a method to introduce differences between linear and nonlinear control design and analysis. The course focuses on Lyapunov-based methods to design and analyze nonlinear control systems. Topics include: Autonomous and Nonautonomous Systems, Integrator Backstepping, Input-Output Stability, Input-to-State Stability, Feedback Linearization, Observers and Filters, and Robust and Adaptive Control. Prerequisites are an understanding of undergraduate calculus, linear algebra and linear control methods. The student is expected to use some simulation software (e.g., Matlab).

Summer

EML 6341 Numerical Methods of Engineering Analysis I (3)
Finite-difference calculus; interpolation and extrapolation; roots of equations; solution of algebraic equations; eigenvalue problems; least-squares method; quadrature formulas; numerical solution of ordinary differential equations; methods of weighted residuals. Use of digital computer.

Plus two courses selected from any graduate course in the College of Engineering curriculum in consultation with advisor