

Online Engineering Education: Bringing Technical Courses to Industry and Students Worldwide

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The paper describes one university's method for delivering technical graduate education coursework to distance learning students in industry, the military, and other universities worldwide. The University of Florida, College of Engineering, has provided distance delivered engineering education since 1964. The current UF EDGE (Electronic Delivery of Gator Engineering) program uses full online delivery of campus-based courses. The UF EDGE program brings the engineering classroom and UF research active professors' knowledge online to offer master's degrees and engineering certificates from the UF College of Engineering. The UF EDGE program uses a combined classroom format; linking local engineering graduate students sitting in production studio classrooms with distance students worldwide participating in the same course content, materials, and exams.

A subset of UF EDGE courses related to Structural and Multidisciplinary Optimization is examined, including: Reliability Engineering, Design of Experiments, Response Surface and Process Optimization, Finite Element Methods, and Introduction to Random Dynamical Systems. Three main components of these online engineering education courses will be covered in this work: 1) infrastructure, format, and motivation behind the UF combined campus and distance learning environment; 2) expectations of faculty and unique opportunities presented to faculty by instructing UF EDGE dual campus/distance delivered courses; and 3) how engineering faculty and distance learning students perceived the online course delivery technologies and teaching/learning experience.