Distance Learning

Small Satellite Engineering Graduate Certificate

Overview
The Department of Electrical and Computer Engineering, in collaboration with the Department of Systems Engineering and Operations Research, offers a graduate certificate in small satellite engineering with a focus on CubeSats. This certificate provides a broad understanding of small satellite missions and operations and of technologies for spacecraft design and engineering including satellite bus, hardware and software systems, and communications. A two-semester hands-on project course is included to transition theory into engineering practice in satellite and ground station engineering. Course work for the graduate certificate can be used for credit toward the MS in Electrical Engineering or Computer Engineering, or MS in Systems Engineering.

Who Should Enroll?
As satellite technology is evolving rapidly, the adoption of CubeSats for complex missions has gained widespread approval and is stimulating a transformation of the entire industry. The certificate's primary purpose is to provide a well-defined body of information for students who want to advance or update their knowledge in CubeSat technologies, but who do not necessarily wish to complete requirements for the MS degree.

Certificate Requirements
The certificate is awarded on completion of four required graduate courses (12 credits) in space systems. A cumulative GPA of 3.00 is required, and at most one course with a grade of C may be applied toward the certificate.

Coursework:
- ECE580 Small Spacecraft Engineering (3)
- ECE639 Satellite Communications (3)
- SYST682 Space Systems Engineering (3)
- ECE691 and ECE692 CubeSat Design/CubeSat Engineering (a two semester project course 1.5+1.5)

Program Delivery
The certificate program has been designed to meet the needs of working professionals. Hence, courses are offered in class and synchronously online; students can participate from a remote location or attend the class on campus. Video recordings of class lectures will be archived and available for viewing by enrolled students. One or two courses will be offered every semester; the time required to complete the certificate may vary from three to five semesters depending on individual circumstances.

Admissions
The graduate certificate is open to all students who hold BS degrees in science and engineering disciplines from accredited universities and can hold graduate status (either degree or non-degree) in the Volgenau School of Engineering. Students must be admitted to Mason’s Graduate School to receive a graduate certificate.

To apply:
https://volgenau.gmu.edu/academics/graduate-programs
Email: vsegadm@gmu.edu
Phone: 703-993-1512

For information on program content:
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