Doctor of Engineering

Engineering with a Concentration in Electrical and Computer Engineering (DEng)

The Department offers a Doctor of Engineering (D.Eng.) degree with concentration in Electrical and Computer Engineering in accordance with the admission criteria and degree requirements specified in the Frank Batten College of Engineering and Technology section in this catalog. The curriculum of this concentration consists of 18 credit hours of ECE 600 and 800 level courses as core courses, 18 credit hours of graduate coursework in the area of specialization and 12 credit hours of applied doctoral project. The courses need approval of the advisor and the graduate program director. Among the total 36 credit hours of coursework, no more than five graduate courses can be taken in other departments.

Doctor of Engineering Program

The College offers an interdisciplinary Doctor of Engineering (D.Eng.) program to provide the Commonwealth and the nation with exceptionally educated engineering practitioners. These individuals will have developed the highest possible capability to provide innovative solutions in specialized engineering endeavors. The graduates of the program will meet the highest standards for advanced level engineering and leadership positions in industry and government.

Admission Criteria

Consideration for admission to the Doctor of Engineering program requires the following:

1. A formal application;
2. Undergraduate and graduate transcripts;
3. Two letters of recommendation (One of the letters of recommendation should be from an agency point of contact if a sponsoring agency is involved. Sponsorship does not necessarily imply financial support, but it rather focuses on the provision of a project and access to data, information, and means to apply and test a solution.);
4. An essay describing the applicant's preparation for graduate work, personal and academic goals, and professional objectives.
5. A personal or telephone interview of the applicant with the graduate program director will be required;
6. Engineering experience of at least two years within the last five years;
7. Master's degree with a grade point average of 3.5 out of 4.0 in an appropriate STEM field from an accredited institution of higher education.

Curriculum Requirements

A minimum of 48 hours of graduate work beyond the master's degree is required including:

- 18 credit hours of ECE or MSIM 600 and 800 level courses as core courses,
- At least 18 credit hours of graduate coursework in the student's area of specialization as determined by the department
- At least 12 credit hours of an applied doctoral project
- Not more than 9 credit hours of non-ECE courses.

At least three-fifths of the course work (15 credit hours) must be at 800-level. Exceptions to the credit-hour distribution requirements at any level must be approved in writing by the graduate program director, the dean or his or her designee, and the provost or his or her designee.

Additional Requirements

Continuation and Graduation Requirements

The continuation requirements are the same as the continuation requirements for the Doctor of Philosophy programs. The graduation requirements for the Doctor of Engineering degree are as follows:

1. Satisfactory completion of a minimum of 48 credit hours of approved graduate work beyond the master's degree, including the doctoral project.
2. Satisfactory performance on a diagnostic examination at the completion of nine credit hours of coursework. The purpose of this examination is to determine if the student has adequate background to pursue a doctoral degree. The diagnostic examination may only be repeated once.
3. Satisfactory completion of a written and oral candidacy examination before the advisory committee. The student will take the candidacy examination when he/she is within six credit hours of completing all the required coursework. The candidacy examination may only be repeated once.
4. Preparation and successful defense of a project concept proposal in both written and oral formats. The student will be required to prepare and present a concept proposal related to the work that will be undertaken for the doctoral project. The concept proposal will be defended before the doctoral project committee.
5. Submission of progress reports as deemed necessary by the doctoral project committee.
6. Written report of the project results. The doctoral project shall be documented in a manner consistent with advanced, professional work. The project report will follow the standard format for Old Dominion University dissertations and theses.
7. Comprehensive oral defense of the doctoral project before the student's doctoral committee and a general audience.

The applied doctoral project must successfully demonstrate the student's mastery of the subject area and his/her ability to apply advanced technical knowledge to identify, formulate, and solve novel and complex engineering problems. Once a student has completed the course work, passed the candidacy examinations, and has gained approval for the project proposal, the student advances to candidacy. It is a University requirement that students who have advanced to candidacy be enrolled for at least one credit hour every fall, spring, and summer until graduation. The project must address a complex but practical problem currently faced by the public, industry, or government, and it must provide a solution that satisfies all the technical, social, political, economic, safety, sustainability, and environmental requirements and/or constraints. Both advisory and doctoral project committees will have at least three members certified for graduate instruction; two faculty members must be from ECE department. The committee chair must be a full time ECE faculty or a faculty member with an ECE degree in the BCET college. A faculty that is not in the BCET college can still be approved to serve as an advisor but cannot be the committee chair unless they have a joint appointment with ECE. The committee must also have at least one non-ECE person with special knowledge of the project subject area.