

M.S. in Electrical and Computer Engineering

Housed in the Department of Electrical Engineering and Computer Science in the College of Engineering, the M.S. in Electrical and Computer Engineering prepares students for advanced careers in industries where increasing reliance on systems-level design has created high demand for electrical, computer, software and systems engineers. There are two areas of concentration available: Electrical Engineering and Computer Engineering.

Program-Level Student Learning Outcomes

Students will:

- Apply advanced topics in electrical or computer engineering to a selected concentration.
- Apply fundamental electrical and computer engineering professional practices to analyze, design, and implement electrical and/or computer systems.
- Communicate effectively on issues pertaining to electrical and computer engineering.

Daytona Beach Program Requirements

Core Requirements (based on Area of Concentration)	15
Option	15
Total Credits	30

Computer Engineering Area of Concentration

This area includes the analysis, design, development and deployment of computer systems, particularly real-time, safety-critical, and high-reliability systems.

Core Requirements

CESC 500	Engineering Project Management	3
ELEC 510	Linear Systems	3
ELEC 515	Random Signals	3
SYSE 500	Fundamentals of Systems Engineering	3
SYSE 505	System Safety and Certification	3
Total Credits		15

Option I: Capstone

CESC 690	Graduate Research Project	3
Electives (500-600 level)		12
Total Credits		15

Option II: Thesis

CESC 700	Graduate Thesis	9
Electives (500-600 level)		6
Total Credits		15

Electives

CESC 510	Digital Signal Processing	3
CESC 528	Networks	3
CPSC 527	System Exploitation and Penetration Testing	3
CPSC 529	Computer Security	3
CPSC 532	Software Security Assessment	3
CPSC 538	Applied Cryptography	3
CPSC 555	Artificial Intelligence	3
CPSC 600	Advanced Algorithms	3

DSCI 500	Database and Information Retrieval	3
ELEC 525	Avionics and Radio Navigation	3
ELEC 527	Modern Control Systems	3
ELEC 620	Digital Communications	3
ENGP 501	Numerical Methods for Engineers and Scientists	3
MATH 510	Fundamentals of Optimization	3
MATH 532	Numerical Linear Algebra for Engineers	3
MATH 553	High Performance Scientific Computing	3
MECH 503	Introduction to Autonomous Vehicle Systems	3
MECH 527	Modern Control Systems	3
MECH 622	Path Planning and Navigation	3
SFTW 500	Software Engineering Discipline	3
SFTW 530	Software Requirements Engineering	3
SFTW 610	Software Systems Architecture and Design	3
SYSE 530	System Requirements Analysis and Modeling	3
SYSE 560	Introduction to Systems Engineering Management	3
SYSE 610	System Architecture Design and Modeling	3
SYSE 625	System Quality Assurance	3
SYSE 660	Organizational Systems Management	3

Electrical Engineering Area of Concentration

This area includes avionics, communications, power electronics, electromagnetic systems, computing systems, control systems, and systems engineering.

Core Requirements

ELEC 510	Linear Systems	3
ELEC 515	Random Signals	3
ELEC 525	Avionics and Radio Navigation	3
ELEC 620	Digital Communications	3
SYSE 500	Fundamentals of Systems Engineering	3
Total Credits		15

Option I: Capstone

ELEC 690	Graduate Research Project	3
Electives (500-600 level)		12
Total Credits		15

Option II: Thesis

ELEC 700	Graduate Thesis	9
Electives (500-600 level)		6
Total Credits		15

Electives

CESC 500	Engineering Project Management	3
CESC 510	Digital Signal Processing	3
CESC 528	Networks	3
CPSC 527	System Exploitation and Penetration Testing	3
CPSC 529	Computer Security	3
CPSC 532	Software Security Assessment	3
CPSC 538	Applied Cryptography	3
CPSC 555	Artificial Intelligence	3
CPSC 600	Advanced Algorithms	3
DSCI 500	Database and Information Retrieval	3
ELEC 527	Modern Control Systems	3
ENGP 501	Numerical Methods for Engineers and Scientists	3
MATH 510	Fundamentals of Optimization	3

MATH 532	Numerical Linear Algebra for Engineers	3
MATH 553	High Performance Scientific Computing	3
MECH 503	Introduction to Autonomous Vehicle Systems	3
MECH 527	Modern Control Systems	3
MECH 622	Path Planning and Navigation	3
SFTW 500	Software Engineering Discipline	3
SFTW 530	Software Requirements Engineering	3
SFTW 610	Software Systems Architecture and Design	3
SYSE 505	System Safety and Certification	3
SYSE 530	System Requirements Analysis and Modeling	3
SYSE 560	Introduction to Systems Engineering Management	3
SYSE 610	System Architecture Design and Modeling	3
SYSE 625	System Quality Assurance	3
SYSE 660	Organizational Systems Management	3

Suggested Plan of Study

Year One

Requirements	Credits
ELEC 510 - Linear Systems	3
ELEC 515 - Random Signals	3
SYSE 500 - Fundamentals of Systems Engineering	3
Semester Hours	9

Requirements	Credits
CESC 500 - Engineering Project Management or ELEC 525 - Avionics and Radio Navigation	3
SYSE 505 - System Safety and Certification or ELEC 620 - Digital Communications	3
Elective	3
Semester Hours	9

Total Credits

Total Hours for All Requirements: 18

Year Two

Requirements	Credits
Elective	3
Elective or Thesis 1	3
Semester Hours	6

Requirements	Credits
Elective or Thesis 2	3
GRP or Thesis 3	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 12