# Accelerated Undergraduate-Graduate Programs

Computer Science - Accelerated Undergraduate-Graduate Program (B.S. / M.S.)

College of Engineering and Computer Science
Department of Computer Science,
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## Admission Requirements
- See Common Program Prerequisites.
- Qualified students may apply after completion of a minimum of 60 credit hours and successful completion of the Foundation Exam.
- Completion of no more than 90 credit hours.
- Completion of the GRE with a highly competitive score by the end of first semester of the senior year for continuation in the program.
- Admission is not automatic. Interested students may need to be interviewed.
- Admission to the Accelerated Program does not guarantee formal admission to the MS program.

## Degree Requirements
- None

### 1. UCF General Education Program (GEP) (39 hrs)
- See Computer Science major in the catalog for track specific GEP requirements.

#### A: Communication Foundations
- ENC 3241 Writing for the Technical Professional or ENC 3250 Professional Writing

#### B: Cultural & Historical Foundations
- ENC 3241 Writing for the Technical Professional or ENC 3250 Professional Writing

#### C: Mathematical Foundations
- STA 2023 Statistical Methods I
- COP 3330 Object Oriented Programming
- COP 3502C Computer Science I
- COP 3503C Computer Science II
- CDA 3103C Computer Logic and Organization
- COT 3100C Introduction to Discrete Structures
- CIS 3360 Security in Computing
- COP 3402 Systems Software
- COP 4210 Discrete Structures II
- COP 4331C Processes for Object-Oriented Software Development
- COT 3960 CS Foundation Exam

#### Select 1:
- 3 hrs
- ENC 3241 Writing for the Technical Professional or ENC 3250 Professional Writing

### 2. Common Program Prerequisites (CPP) (17 hrs)
- See Computer Science major in the catalog for the CPP requirements.

### 3. Core Requirements: Basic Level (30 hrs)
- STA 2023 Statistical Methods I
- COP 3330 Object Oriented Programming
- COP 3502C Computer Science I
- COP 3503C Computer Science II
- CDA 3103C Computer Logic and Organization
- COT 3100C Introduction to Discrete Structures
- CIS 3360 Security in Computing
- COP 3402 Systems Software
- COP 4210 Discrete Structures II
- COP 4331C Processes for Object-Oriented Software Development
- COT 3960 CS Foundation Exam

#### Select 1:
- 3 hrs
- ENC 3241 Writing for the Technical Professional or ENC 3250 Professional Writing

### 4. Core Requirements: Advanced Level (18 hrs)
- At least 3 hours of independent study or research allowed. No internship or cooperative education credits are allowed.
- It is recommended that students take at least 3 classes from a primary area to gain an in-depth knowledge in that area of Computer Science.
- It is recommended that students take classes from at least 2 different secondary areas to gain a broad knowledge of Computer Science. These courses may also be listed in the student’s primary area.
- A “C” (2.0) or better is required in all courses in this area.
- Students must maintain at least a 2.5 GPA in the following all courses in this section.
- Students participating in the Accelerated Undergraduate to Graduate Program in Computer Science should take up to 12 hours of 5000 and 6000 level courses from the areas listed below.

## Systems Area
- COP 4331C Processes for Object-Oriented Software Development
- COP 4520 Concepts of Parallel and Distributed Processing
- COP 4600 Operating Systems
- COP 4710 Database Systems
- EEL 4768 Computer Architecture
- CDA 5106 Advanced Computer Architecture
- COP 5611 Operating Systems Design Principles
- COP 5711 Parallel and Distributed Database Systems

## AI and Machine Learning Area
- CAP 4053 AI for Game Programming
- CAP 4453 Robot Vision
- CAP 4630 Artificial Intelligence
- CAP 5415 Computer Vision
- CAP 5512 Evolutionary Computation
- CAP 5610 Machine Learning
- CAP 5636 Advanced Artificial Intelligence

## Graphics, Games, and HCI Area
- COT 4500 Numerical Calculus
- CAP 5510 Bioinformatics
- CAP 5512 Evolutionary Computation
- COP 5021 Program Analysis
- COP 5537 Network Optimization
- COT 5405 Design and Analysis of Algorithms
- CAP 5725 Computer Graphics I

## Algorithms and Complexity Area
- COT 4500 Numerical Calculus
- CAP 5510 Bioinformatics
- CAP 5512 Evolutionary Computation
- COP 5021 Program Analysis
- COP 5537 Network Optimization
- COT 5405 Design and Analysis of Algorithms

## Software Engineering Area
- CIS 4615 Secure Software Development and Assurance
- COP 4020 Programming Languages I
- COP 4520 Concepts of Parallel and Distributed Processing
- COP 4710 Database Systems
- CEN 5016 Software Engineering
- COP 5021 Program Analysis
- COP 5711 Parallel and Distributed Database Systems

## Cybersecurity Area
- CIS 3362 Cryptography and Information Security
- CIS 4203C Digital Forensics
- CIS 4361 Secure Operating Systems and Administration
- CIS 4615 Secure Software Development and Assurance
- CIS 4940C Topics in Cybersecurity
- CAP 4145 Introduction to Malware Analysis
- CNT 4403 Network Security and Privacy
- EEE 4346C Hardware Security and Trusted Circuit Design

## Big Data Area
- COP 4520 Concepts of Parallel and Distributed Processing
- COP 4710 Database Systems
- COP 4500 Numerical Calculus
- EEL 4768 Computer Architecture
- CNT 4425C Cloud Computing Management
- CDA 5106 Advanced Computer Architecture
- CNT 5008 Computer Communication Networks Architecture
- CDA 5110 Parallel Architecture and Algorithms
- COP 5611 Operating Systems Design Principles
- CAP 5610 Machine Learning
- COP 5711 Parallel and Distributed Database Systems

## Vision and Robotics Area
- CAP 4453 Robot Vision
- CAP 4720 Computer Graphics
- CAP 5415 Computer Vision
- CAP 5725 Computer Graphics I
Accelerated Undergraduate-Graduate Programs

EGN 4060C  Introduction to Robotics  3 hrs
EEL 4660  Robotic Systems  3 hrs
EEL 5820  Image Processing  3 hrs

Computer Networks Area
CNT 4403  Network Security and Privacy  3 hrs
CNT 4704  Analysis of Computer Communication Networks  3 hrs
EEL 4781  Computer Communication Networks  3 hrs
CNT 5008  Computer Communication Networks Architecture  3 hrs
COP 5537  Network Optimization  3 hrs
CNT 5805  Network Science  3 hrs
EEL 5780  Wireless Networks  3 hrs

5. Restricted Electives (15 hrs)
4000-5000 level mathematics or statistics  6 hrs
- courses from: STA, MAP, MAA, MAD, MAS prefixes and the following courses.
- No independent study hours, internship, or cooperative education hours are allowed.
MAC 2313  Calculus with Analytic Geometry III  4 hrs
MAP 2302  Ordinary Differential Equations I  3 hrs
MAS 3105  Matrix and Linear Algebra  4 hrs
MAS 3106  Linear Algebra  4 hrs

6. Capstone Requirements (6 hrs)
- A “C” (2.0) or better is required in the two courses.
COP 4934  Senior Design I  3 hrs
COP 4935  Senior Design II  3 hrs

7. Foreign Language Requirements
Admissions
- Two years high school, or one year college language (or equivalent proficiency exam) prior to graduation.
Graduation
- None

8. Electives (4 hrs)
- Select primarily from upper level courses after meeting with a departmental advisor. Courses may be outside the department.

9. Additional Requirements
- None

10. Required Minors
- None

11. Departmental Exit Requirements
- None.

12. University Minimum Exit Requirements
- A 2.0 UCF GPA
- 60 semester hours earned after CLEP awarded
- 48 semester hours of upper division credit completed
- 30 of the last 39 hours of course work must be completed in residency at UCF.
- A maximum of 45 hours of extension, correspondence, CLEP, Credit by Exam, and Armed Forces credits permitted.
- Complete the General Education Program, the Gordon Rule, and nine hours of Summer credit.

Total Undergraduate Hours Required
- 120

Total Combined Hours Required
- 138

Honors In Major
- None

Related Programs
- Computer Engineering
- Information Technology

Certificates
- Cyber Operations

Related Minors
- Intelligent Robotic Systems (IRS) - Interdisciplinary
- Secure Computing and Networks

Advising Notes
- The following will be waived for this joint degree program:
- The limit of nine hours to be shared between undergraduate and graduate programs.
- Undergraduate students taking graduate courses must be within nine hours of graduation
- Undergraduate students taking graduate courses must not register for more than a total of twelve hours in that semester
- Undergraduate students are not eligible to take 6000-level courses

Transfer Notes
- None

Acceptable Substitutes for Transfer Courses
- None

Shared Courses (12 hrs)
- Up to 12 credit hours of approved 5000 or 6000 level courses of grades B (3.0) or better may be counted towards the BS and Masters degrees. These 12 credit hours will meet either restricted elective or course requirements for the major. Contact the Graduate Coordinator in the Computer Science department for a list of acceptable courses.

Graduate Courses Link
- None

Program Academic Learning Compacts
- Program Academic Learning Compacts (student learning outcomes) for undergraduate programs are located at: http://www.oias.ucf.edu/alc/academic_learning_compacts.htm

Equipment Fees
- Part-Time Student: $9 per term
- Full-Time Student: $18 per term