Graduate Programs in Computer Science

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About the Department

• Chair
  • Dr. Damla Turgut

• Graduate Coordinator
  • Dr. Wei Zhang

• Grad Students Services Coordinator
  • Ms. Jeanine Clements
Heritage and Quality of Faculty at UCF Computer Science

• Heritage
  • 1st PhD program at UCF
  • 1st CS PhD in Florida

• Distinguished Faculty
  • 2 NAI fellows
  • 3 NAE fellows
  • 6 IEEE Fellows
  • 2 ACM Fellows
  • 1 IAPR Fellow, 1 AAAS Fellow, 1 SPIE Fellow,
  • 10 NSF CAREER Awards
  • 3 AFOSR Young Investigator awards
  • 2 DARPA Young Faculty Award
  • Hall of Fame member (ISCA, HPCA)
Excellence

International Collegiate Programming Contest (first contest in 1982)

• Southeast Region
  • Always finished in top 3
  • 2012-2018 Consecutive 7 times: 1st place
  • UCF placed first 21 times, second 19 times, third 19 times.

• World Finals
  • UCF competed in World Finals 31 times
  • 2019-20: 17th place
  • 2018-19: 85th place
  • 2017-18: 10th place in world, 1st in North America
  • 2016-17: 13th place, 1st among US teams
  • 2015-16: 33rd place, 3rd among US teams
  • 2014-15: 28th place
  • 2013-14: 19th place
  • 2012-13: 36th place

See: https://www.ucfprogrammingteam.org/index.php/records/team-record-icpc
Excellence

- National Collegiate Cyber Defense Competition (CCDC)
  - 2018, 2019, 2020: Second Place

- DoE CyberForce Competition:
  - 1st Place (2018, 2021, 2022, 2023)

- US Cyber Open
  - 2nd Place (2021)

- CyberSEED Capture The Flag Competition
  - 1st place (2022)

See: https://cyber.cecs.ucf.edu/competitions

CCDC 2021
vs. 248 teams in 2021
Beating UT Austin, U Washington, UC Irvine, etc.
CS Graduate Degree options

https://www.cs.ucf.edu/graduate/graduate-degrees/

> 770 grad students

• Ph.D. Program:
  • Ph.D. in Computer Science
  • Ph.D. in Big Data Analytics (hosted in the Dept of Statistics)

• M.S. Program
  • MS in Computer Science
  • MS in Computer Vision
  • MS in Cyber Security
  • MS in Digital Forensics
  • MS in Data Analytics (in Collaboration with the Dept of Statistics)
  • MS in FinTech (hosted in the School of Business)

• Accelerated BS-MS Program https://www.cecs.ucf.edu/current-students/bs-ms-program/

• Graduate Certificate
  • Mixed Reality Engineering
CS Graduate Student Body

- Ph.D. in Computer Science: 153
- MS in Computer Science: 318
- MS in Computer Vision: 29
- MS in Cyber Security: 106
- MS in Digital Forensics: 93
- MS in Data Analytics: 72
CS Areas of Expertise

1. Computer Vision, Image and Video Processing
2. Machine Learning and AI
3. Virtual Reality and HCI, Computer Graphics
4. Software Engineering and Systems, Computer Architecture
5. Database, Data Analytics
6. Parallel Computation
7. Networking and Mobile Computing
8. Computer Security and Digital Forensics
9. Bioinformatics and Systems Biology

https://www.cs.ucf.edu/research/research-areas/
https://www.cs.ucf.edu/people/faculty-by-research-area/
Admission Requirements for Our Graduate Programs
Minimum Admission Criteria for MS Program

- BS in CS or closely related area
  - 3.0 GPA
  - GRE: No minimum, but prefer Q:160, V:150 or above
  - TOEFL 80 (only required for international students)

- Without a strong undergraduate background in Computer Science or closely related areas (e.g. Software Engineering, Information Technology, Computer and Electric Engineering), a student can take these prerequisite courses as non-degree seeking and score “B” or better in all of them.

  - CDA 3103C: Computer Logic and Organization
  - COP 3502C: Computer Science I
  - COP 3503C: Computer Science II
Eligibility for Accelerated BS-to-MS Program

- UCF Undergraduate Students must have a 3.0 GPA
- Completed at least 60 Credit Hours
- The following course with a B or better
  - COP 3503C: Computer Science II or COP 3503H: Honors Computer Science II
- Passed the Foundations Exam

https://www.cecs.ucf.edu/current-students/bs-ms-program/

Qualified students can begin their master’s degree course work while they are undergraduate juniors/seniors and double-count up to 12 credit hours of specific graduate courses (4 graduate level courses) for both the bachelor’s and master’s degree requirements.
**MS: Non-Thesis Option**

- 30 credit hours: all graduate level (5000 level or above)

- 6 credit hours of required courses:
  - CDA 5105 - Advanced Computer Architecture
  - COT 5405 - Design & Analysis of Algorithms

  The two required courses must be B or better; no course below C; at most 6 credit hours below B

- Additional 6 credit hours must be sequence courses (i.e. in the same topical area)
  - Topics: Any of the research topics. e.g. Computer Vision, Machine Learning, Artificial Intelligence, Parallel Architecture, Network, Database...

- Min. 15 credit hours need to be 6000 level
- Max. 6 credit hours can be outside CS with approval
- Max. 6 credit hours can be Independent Study/Directed Research
**MS: Thesis Option**

- 30 credit hours: all graduate level (5000 level or above)

- 6 credit hours of required courses:
  - CDA 5105 - Advanced Computer Architecture
  - COT 5405 - Design & Analysis of Algorithms

  The required courses must be B or better; no course below C; at most 6 credit hours below B.

- Additional 6 credit hours must be sequence courses (i.e. in the same topical area)
  - Topics: Any of the research topics. e.g. Computer Vision, Machine Learning, Artificial Intelligence, Parallel Architecture, Network, Database...

- Min. 15 credit hours need to be 6000 level
- Max. 6 credit hours can be outside CS with approval
- At most 3 credits can be Independent Study
- 6 credit hours of thesis
Minimum Admission Criteria for Ph.D. Program

- BS or MS degree in CS or related area
  - 3.0 GPA in the final degree
  - GRE: No minimum, but prefer Q:160, V:150 or above
  - TOEFL 80 (only required for international US students)
PhD Course Requirements

- Must Have an Advisor Within the First Year of Study
  - Preferably from the first semester

- A minimum of 72 credit hours beyond BS degree

- 9 credit hours of required courses:
  - CDA 5106 – Advanced Computer Architecture
  - COT 5405 – Design & Analysis of Algorithms
  - COT 6410 – Computational Complexity
  - No Transfers Allowed for Required Courses

- Program of Study Template

- At least 36 credits of actual course work, of which at least 18 credits should be 6000 or 7000-level CS courses, no Independent Study or Dissertation in this category.

- 15 to 24 credits of dissertation

- No more than 12 credit hours of Independent Study

- If you have an MS degree you can transfer up to 30 credit hours in your PhD degree
PhD Milestones

1. Qualifying Review
2. Candidacy
3. Proposal
4. Defense

Total 4-6 years duration
Transfer Credits

• Only graduate-level courses may be accepted as transfer credits.
• Only courses with a grade of "B" or higher are allowed to be transferred into a POS

For students in the PhD program with an earned master's degree, up to 30 credit hours may be transferred if the following criteria are met:

- The earned degree is from a regionally accredited institution or recognized foreign institution.
- The master's degree was earned in the same or a closely related area of study.
- Individual transfer courses are approved by the CS program coordinator.
Transfer Credits (Cont.)

• Only formal course work hours, but not thesis or research hours, may be used as transfer credits.

• External transfer credits are limited to up to 9 credit hours for courses that are not part of an earned graduate degree.

• Internal transfer credits are also limited to up to 9 credit hours for courses that are not part of an earned graduate degree, except for the BS+MS students, who can transfer 12 credit hours.
PhD Application and Admission Trends

**Fall 2019 - 2023**

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**Spring 2019 - 2023**

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College of Engineering and Computer Science

Assistantships/Support

• Graduate Teaching Assistantship (GTA)
  • Nominated by Advisor
  • for PhD students only.

• Graduate Research Assistant (GRA)
  • Nominated by Advisor

• Hourly Positions
  • Chosen by instructors.
  • Rate of Pay around $12 per hour.
College of Engineering and Computer Science

Application and Deadlines

• **Deadlines**
  - **Fall Priority:** Jan 15
  - **Domestic**
    - Fall: Jul 1
    - Spring: Dec 1
  - **International**
    - Fall: Jan 15
    - Spring: Jul 1

• **Application**
  - All documents should be submitted to the College of Graduate Studies (https://applynow.graduate.ucf.edu/apply/)
Where to find information?

• CS-PHD Information:
  • [https://www.cs.ucf.edu/graduate/computer-science-phd/](https://www.cs.ucf.edu/graduate/computer-science-phd/)

• CS-MS Information:
  • [https://www.cs.ucf.edu/graduate/computer-science-masters/](https://www.cs.ucf.edu/graduate/computer-science-masters/)
More about Graduate Programs at UCF

• College of Graduate Studies: https://graduate.ucf.edu/
Thank you!

Questions?