



# Welcome

Fast Track Orientation  
Fall 2022 Cohort

Department of Computer Science  
Erik Jonsson School of  
Engineering and Computer Science

The University of Texas at Dallas



# Welcome



Dr. Ovidiu Daescu  
Department Head  
Department of Computer Science



# Welcome

Your main contacts in graduate CS:

## Advising

**Jorge Cobb**

Associate Professor

Director of Graduate Studies.

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## Degree Plan Evaluators

**Douglas Hyde**

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**Sydney J. Samuel**

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- Steps in Fast Track
- Grading and transfer of work
- Areas of Study (Track)
  - **Traditional Computer Science**
  - **Networks and Telecommunications**
  - **Intelligent Systems**
  - **Cyber Security**
  - **Systems**
  - **Data Science**
  - **Interactive Computing**
  - **MS in Software Engineering**
- Next Steps

- COHORT: A new group of SE/CS students is assembled each Fall and Spring. You are the FALL 2022 Cohort
- ACTIVE: This is after orientation until you graduate. Choose classes and get enrolled. **Use the Petition Form to take Grad courses. (send to ECS\_ADU@utdallas.edu)**
- GRADUATING: During your graduation audit, you need to file your **Fast Track Graduate Matriculation Form** to open your Masters program (it does not happen automatically!).
- MATRICULATED F/T to MS: Your graduate program has been opened on ORION. You must graduate from the Undergraduate program and you will be enrolled at the New Student Orientation for your first semester of Graduate work.

- Course petition form is in the fast track web site
  - <https://engineering.utdallas.edu/engineering/academics/undergraduate-majors/fast-track/>
- Also, the Fast Track Guidelines for each Department are there.
  - Read the CS/SE F/T Guidelines!



### Petition for Undergraduate Student to Take Graduate Course(s)

Student: \_\_\_\_\_ Student ID # \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone #: ( \_\_\_\_\_ ) \_\_\_\_\_ - \_\_\_\_\_ E-mail: \_\_\_\_\_@utdallas.edu \_\_\_\_\_

#### Undergraduate:

Major: \_\_\_\_\_ Degree: \_\_\_\_\_ School: ECS  
 Graduation Catalog: \_\_\_\_\_  
 Fast track program/degree program to which credits will be applied \_\_\_\_\_

#### Graduate:

Major: \_\_\_\_\_ Degree: \_\_\_\_\_ School: \_\_\_\_\_  
 Graduation Catalog: \_\_\_\_\_

Total Credit Hours Completed: \_\_\_\_\_ GPA Overall: \_\_\_\_\_  
 Total hours in progress \_\_\_\_\_ Current GPA in the major: \_\_\_\_\_  
 Anticipated Total Credit Hours completed at end of current semester: \_\_\_\_\_  
 Anticipated Total Credit Hours in Major completed at end of current semester: \_\_\_\_\_  
 Anticipated semester of undergraduate graduation: \_\_\_\_\_  
 Anticipated semester of graduate matriculation: \_\_\_\_\_

Registration: Spring  Summer  Fall  UG Hours Enrolled: \_\_\_\_\_ Grad Hours Enrolled: \_\_\_\_\_ # of Hours Work per week: \_\_\_\_\_

Graduate Course Number	Call Number	How Used on BS Degree Plan (if for graduate use only, please designate option C)	Approved course Yes or no	If course is not on the approved list, please provide an explanation as to why student should be allowed to enroll in it

#### Signatures:

1 \_\_\_\_\_ Date \_\_\_\_\_ 3 \_\_\_\_\_ Date \_\_\_\_\_  
 Student Signature Graduate Program Head/Advisor

Approved  
 Approved, pending completion of 90 hours  
 Approved  
 Approved, pending completion of 90 hours

2 \_\_\_\_\_ Date \_\_\_\_\_  
 Undergraduate Associate Dean

4 \_\_\_\_\_ Date \_\_\_\_\_  
 Undergraduate Advisor

Student registered for graduate courses

*The University of Texas at Dallas is an Equal Opportunity/Affirmative Action University*

Routing: Undergraduate Associate Dean - Graduate Program Head/Advisor - Undergraduate Advisor  
 CC: Student

- To take a graduate Level course:
  - Have completed the levelling course(s).
  - Fill out and route your Petition for Ugrad to take Grad courses to the signoff loop.
    - ADU Undergraduate office (Dr. Amy Walker)
    - CS/SE Director Advising (Dr. Jorge Cobb)
  - Return to OUGA for further direction:
    - Option A or B enrolled by advisor.
    - **Option C must be enrolled by Registrar.**





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 Approved, pending completion of 90 hours

2    
 Undergraduate Associate Dean Date

4    
 Undergraduate Advisor Date

Student registered for graduate courses

3    
 Graduate Program Head/Advisor Date

Approved  
 Approved, pending completion of 90 hours

➤ Fast Track Students:

- Courses Taken as Option A (Undergrad only) cannot be applied to your Masters program.
  
- Courses Taken as Option B (Fast Track) and
- Courses Taken as Option C (Grad only)
  - Are treated as Transfer Credits; Credit and GPA follow you.
  - All grades in Option B or C WILL affect your graduate GPA.

**\* A Max of 15hrs (A + B + C) is allowed in the UG degree plan..**



## Things you must do every semester to achieve the best results

Early registration for spring semester takes place in November and registration for the summer & fall starts in April; each of you may choose a Graduate Level course. It's your responsibility to check out the schedule online and discuss with your UG advisor to know how it will fit your Degree plan.

A graduate advisor will help you in selection of graduate courses.

**Students are strongly recommended NOT to register in more than one CORE COURSE from any degree plan.**



# MS Admission Requirements

- Your Undergraduate work will be assessed for CS 4390 and if the levelling course is not met will be assigned to you at Matriculation. **You would have completed most of the levelling courses (UG equivalent) before graduating with a BS.**

Topic	Grad Class	Equivalent UTD Ugrad
CS I	CS5303	CS1136, 1336, 1337 and 2336
CS II	CS5330	CS2340
Discrete Structures	CS5333	CS2305 and (CS3305 or SE3306)
Algorithm Analysis and Data Structures	CS5343	CS3345
Operating Systems Concepts	CS5348	CS4348
Automata Theory	CS5349	CS4384
Software Engineering	CS5354	CS3354
<b>Computer Networks</b>	<b>CS5390</b>	<b>CS4390</b>
Probability and Statistics in CS and SE	CS3341	CS3341

- Master of Science in Computer Science (33 credit hours)
  - Traditional Computer Science
  - Networking and Telecommunications
  - Intelligent systems
  - Cyber Security
  - Systems track
  - Data Science
  - Interactive Computing
  
- Master of Science in Software Engineering (33 credit hours)

- Levelling courses required vary by track
- You need to satisfy CS 5390 only if you choose the following tracks:
  - CyberSec,
  - Traditional,
  - Systems,
  - Networks and Telecom
- OR you choose to take an elective that requires 5390

## ➤ Department of Computer Science MS Requirements

- Five Core Courses from one of the tracks
- Six approved electives; at least five must be at 6000 or higher level and one approved elective can be a 5000\* or a 6000 level course in.

\* (If the student chooses one of the 5000 level courses, **only CS 5348 can be counted as an elective in all degree plans**)

- All requirements including transfer credit must be completed in a **six year window**.

### ➤ GPA requirements:

- Core GPA  $\geq 3.19$
- Elective GPA  $\geq 3.00$
- Overall GPA  $\geq 3.00$

- Letter grades A, A-, B+, B, B-, C+, C and F are used in grading graduate courses.
- GPA representation for the grades are as follows;

A	4.00	C+	2.33
A-	3.67	C	2.00
B+	3.33	F	0.00
B	3.00		
B-	2.67*		

There is no C- or D

\* Please note B- is less than 3.00



- We have several Computer Science Concentrations:
  - Traditional Computer Science
  - Networks and Telecommunications
  - Intelligent Systems
  - Cyber Security
  - Systems Track
  - Data Science
  - Interactive Computing
  - Software Engineering (Must be in the SE\_MS program)
  
- Fast Track leads you into the CS or SE Masters program.
  - Changing from MS\_CS to MS\_SE or vice versa requires a new online application.
  
- PhD admission requires a separate application.

**Core Courses - Traditional**

CS 6363	Computer Algorithms
CS 6378	Advanced Operating Systems
CS 6390	Advanced Computer Networks
<i>Any two of the following ;</i>	
CS 6353	Compiler Construction
CS 6360	Database Design
CS 6371	Structure and Design of Programming Languages

**Core Courses – Data Science**

CS 6313	Statistical Methods for Data Science
CS 6350	Introduction to Big Data Analytics
CS 6363	Design & Analysis of Comp. Algorithms
CS 6375	Machine Learning
<b><i>Any one of the following:</i></b>	
CS 6301	Special Topic: Social Network Analytics
CS 6320	Natural Language Processing
CS 6327	Video Analytics
CS 6347	Statistics in AI and Machine Learning
CS 6360	Database Design



# Cyber Security Plan

<b>Core Courses – Cyber Security</b>	
CS 6324	Information Security
CS 6363	Design & Analysis of Computer Algorithms
CS 6378	Advanced Operating Systems
<b><i>Any two of the following:</i></b>	
CS 6332	System Security & Malicious Code Analysis
CS 6348	Data and Application Security
CS 6349	Network Security
CS 6377	Introduction to Cryptography

**\*Must also complete two CyberSec electives in the degree plan.**

**Core Courses - Intelligent Systems**

CS 6320

Natural Language Processing

CS 6363

Design &amp; Analysis of Computer Algorithms

CS 6364

Artificial Intelligence

CS 6375

Neural Nets and Machine Learning

Plus one of the following

CS 6360

Database Design

CS 6378

Advanced Operating Systems



# Interactive Computing Plan

<b>Core Courses – Interactive Computing</b>	
CS 6326	Human Computer Interaction
CS 6363	Design & Analysis of Computer Algorithms
<b><i>Any three of the following:</i></b>	
CS 6323	Computer Animation & Gaming
CS 6328	Modeling and Simulation
CS 6331	Multimedia Systems
CS 6334	Virtual Reality
CS 6366	Computer Graphics

**Core Courses - Networks**

<b>CS 6352</b>	Performance of Computer Systems & Networks
<b>CS 6363</b>	Computer Algorithms
<b>CS 6378</b>	Advanced Operating Systems
<b>CS 6385</b>	Telecommunication Networks
<b>CS 6390</b>	Advanced Computer Networks

**Core Courses – Systems**

CS 6304	Computer Architecture
CS 6363	Computer Algorithms
CS 6378	Advanced Operating Systems
CS 6396	Real Time Systems
<b><i>Any one of the following:</i></b>	
CS 6349	Network Security
CS 6376	Parallel Processing
CS 6380	Distributed Systems
CS 6397	Synthesis and Opt of High Perf. Systems
CS 6399	Parallel Architectures and Systems



## Core Courses - Software Engineering

<b>SE 6329*</b>	Object Oriented Software Engineering
<b>SE 6361</b>	Advanced Requirements Engineering
<b>SE 6362</b>	Advanced Software Architecture and Design
<b>SE 6367</b>	Software Testing, Validation & Verification
<b>SE 6387</b>	Advanced Software Engineering Project

\* Credit will be given for only one of the following courses if students take them together to satisfy Computer Science and Software Engineering degree plan requirements:

SE 6329 Object-Oriented Software Engineering, and

CS 6359 Object-Oriented Analysis and Design (cannot be used on SE degree plan)

- **Most Concentrations call for**
  - **5 CORE courses**
  - **5 electives CS or SE 6xxx or greater.**
  - **1 elective in all concentrations can be CS/SE 5XXX or 6XXX. Only 5000 level course applying to the MSCS/SE degree plan is CS 5348.**
  
- **You must complete any levelling course required by the Degree Plan (Concentration) or by chosen courses.**

- Balance your course load (1 grad course  $\geq$  1.5 undergrad course)
  - Days of the week
  - Hours of the Day
  - Give yourself time to network and study
- CORE Courses
- Degree Plan Requirements
- **When you do your graduation audit: **File the Matriculation Form!** At the beginning of your graduating Semester with your Undergraduate Advisor.**

## **Remaining in the *Fast Track* Program**

In order to remain in good standing, a *Fast Track* student must fulfill the following requirements.

1. Must maintain a GPA of at least 3.0 overall and at least 3.0 for graduate courses taken as an undergraduate *Fast Track* student.
2. Must earn a grade of B or better in all graduate courses. Courses in which a student earns a passing grade below B shall only count towards the BS degree and will not count for the MS degree.
3. Must not repeat more than three courses, and must not repeat any course more than once.
4. Grades received for Option C courses count only towards the graduate degree plan.

If, at any time these requirements are not fulfilled, the student will be dropped from the *Fast Track* program. Any graduate credits successfully earned can be applied to the BS degree only, and the benefits of the *Fast Track* program will not apply. A student dropped from the *Fast Track* program shall not use these graduate courses towards a future graduate degree.

- Graduate catalog

- <https://catalog.utdallas.edu/2022/graduate/home/>

- Degree Plans for MS

- <https://cs.utdallas.edu/education/graduate/>  
(scroll to the bottom of the page)

Since I have your attention ...



We want you ... for our Ph.D. program!

1. Ph.D. is “license to do research”
2. But one can be professionally successful without a Ph.D.
3. Rather, one gets Ph.D. because they love to do research, invent new things, and see how your work can be applied by the scientific community. (If you're successful, you will also get the recognition of the community!)
4. It may also put you ahead of other engineers and computer scientists in terms of salary/promotion.

The majority of PhD Students are funded as Teaching Assistants or Research Assistants.

Tuition Paid

Monthly Stipend

Once enrolled in the MS, if you want to discuss the possibility of doing a PhD, please contact me!

We have an excellent group of research faculty, covering a wide-variety of research areas.



- Year 1: Coursework; qualifying exams; explore research areas; find a research adviser
- Year 2: Read papers; identify a problem to work on; start working on research
- Year 3: Form dissertation committee; complete dissertation proposal; perform preliminary research; start publishing papers
- Year 4: Work on research; continue publishing papers
- Year 5+: Write and defend dissertation; look for a job

**Admissions Criteria :** A student may be admitted under two possible options:

- A Master's degree in computer science or its equivalent, and a GPA of at least 3.5, and NO GRE required for the UTD BSCS/SE students **OR**
- A Bachelor's in related area that includes two semesters of calculus and linear algebra with a GPA of at least 3.5 in the last 60 hours, and NO GRE required for the UTD BSCS/SE students