Master of Science in Computer Science (MSCS)
New Students Orientation
Fall 2021
Welcome!
Outline

• Department
• Graduate programs
  – MSCS - General
    • Graduate research project
  – Specialization
    • MSCS-SE – Software Engineering
    • MSCS-DS – Data Science
• Preparatory courses (MSCS prerequisites)
• Internships
• Advising and class registration
• Clubs
• Q & A
Computer Science Department

- 23 full-time faculty
- 495 students

Demographics

- Undergraduate 62%
- Graduate 38%
- White 29%
- Non-resident 27%
- Asian/Pacific Islander 25%
- Hispanic 5%
- Two or more races 7%
- Black 3%
- Native American <1%
- Unknown 4%
- Hispanic 5%
- Two or more races 7%
- Asian/Pacific Islander 25%
- Hispanic 5%
- Two or more races 7%
- Asian/Pacific Islander 25%
Graduate Programs

• MSCS General
  – Course only option
    • Graduate Seminar (CPSC 5890) + a third elective
  – Research project option
    • Two-quarter long supervised research project (CPSC 5990)

• MSCS-SE
  – Software Engineering Specialization
  – A two-quarter-long, industry-sponsored capstone project

• MSCS-DS
  – Data Science Specialization
  – A one-quarter-long, real world data science capstone project
MSCS-SE & MSCS-DS

• Both specializations have strict sequencing requirements
  – Full-time students must start in either fall or spring to finish in five quarters.
  – But,
    • Full-time students can start the general option in fall, winter, or spring and finish in five quarters.

• These requirements are for full-time students who want to finish in five quarters.
# Minimum Credits for Degrees

<table>
<thead>
<tr>
<th>MSCS Program Options</th>
<th>Minimum Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Option</td>
<td>45</td>
</tr>
<tr>
<td>DS Specialization</td>
<td>49*</td>
</tr>
<tr>
<td>SE Specialization</td>
<td>48</td>
</tr>
</tbody>
</table>

* Students who have taken calculus-based probability and linear algebra can be waived from MATH 5315 and reduce the overall required credits for the degree to 46.
Required Courses (27 credits)

Choose One (8 credits)

CPSC Electives (10 credits)
MSCS General

• CPSC 5110 should be taken as early as possible. It is a prerequisite for CPSC 5200 and several other MSCS courses.
  – Students graduated from CERT must take it
  – Students with SE experience can be waived from CPSC 5110 and can fulfill the requirement by taking an additional 5 credits of CPSC electives instead.

• Students can use two 3-credit CPSC courses numbered from 5100-5799 to satisfy a single 5-credit elective.
MSCS General:
Graduate Research Project Option

• 8 Credits, spanning over two quarters

• Supervised by a project advisor

• Deliverables
  – A technical paper
  – A final presentation

• Standardized procedure
  – Request form (needs dept. approval)
  – MSCS Research Project Guidebook for Faculty and Students
  – URL: https://www.seattleu.edu/scieng/computer-science/projects/grad-research/
MSCS with Specialization in Software Engineering

MSCS-SE
MSCS-Software Engineering Degree Requirements

Min. Credits: 48

Required Courses (43 credits)

One CPSC Elective (5 credits)
MSCS-SE

• CPSC 5110 should be taken as early as possible. It is a prerequisite for CPSC 5200 and several other MSCS courses.
  – Students graduated from CERT must take it
  – Students with SE experience can be waived from CPSC 5110 and can fulfill the requirement by taking an additional 5 credits of CPSC electives instead.

• Due to course sequencing and scheduling constraints, full time students must start in fall or spring in order to finish in 5 quarters.

• Satisfactory performance (B- or better) in CPSC 5810 and CPSC 5820 is required.
MSCS-SE
Software Engineering Project

- Teams of 4 or 5 students
- Industry sponsored, using an agile development process
- Substantial team responsibility for working with sponsor to determine requirements
- Must be taken in two consecutive quarters
- Not expected to be possible to start every quarter
## MSCS-SE: Typical Schedules

<table>
<thead>
<tr>
<th>Year</th>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CPSC 5110 core / elective</td>
<td>CPSC 5200</td>
<td>CPSC 5210 core / elective</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CPSC 5120 (3 cr.)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>CPSC 5800 (2 cr.)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>CPSC 5810 (4 cr.) core / elective</td>
<td>CPSC 5820 (4 cr.) core / elective</td>
<td></td>
</tr>
</tbody>
</table>

Full-time

- The set of “core / elective” courses consists of three core courses (see below) and one elective (any 5 credit MSCS course)
  - algorithms: 5610 (fall) or 5600 (winter)
  - systems: 5520 (fall) or 5510 (spring)
  - software development: choice of five courses; at least one is offered each quarter (except summer)
MSCS with Specialization in Data Science

MSCS-DS
MSCS-Data Science
Degree Requirements
Min. Credits: 49

One DS Elective
(5 credits)

Required Courses
(44 credits)
MSCS-DS

• Take either CPSC 5110 or CPSC 5200 depending on experience.
  – Students without prior software engineering experience take CPSC 5110.
  – Students with software engineering experience take CPSC 5200.

• Satisfactory performance (B- or better) in CPSC 5830 is required.

• Students who have taken calculus-based probability and linear algebra can be waived from MATH 5315 and reduce the overall required credits for the degree to 46.
MSCS-DS

• Due to course sequencing and scheduling constraints, *full time students must start in fall or spring in order to finish in 5 quarters.*

• Additional prerequisite:
  – Calculus sequence (needed for the MATH 5315)
**MSCS-DS: Typical Schedules**

<table>
<thead>
<tr>
<th>Year</th>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Math 5315 (3 cr)</td>
<td>CPSC 5310</td>
<td>CPSC 5320 (3 cr)</td>
</tr>
<tr>
<td></td>
<td>CPSC 5305 (3 cr)</td>
<td>SE (5200) / DS elect / SW dev</td>
<td>CPSC 5330 (3 cr)</td>
</tr>
<tr>
<td></td>
<td>CPSC 5610 or CPSC 5520</td>
<td></td>
<td>SE (5110 or 5200) / SW dev</td>
</tr>
<tr>
<td>2</td>
<td>CPSC 5610 or CPSC 5520</td>
<td>CPSC 5830</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SE (5110) / DS elect / SW dev</td>
<td>CPSC 5800 (2 cr)</td>
<td></td>
</tr>
</tbody>
</table>
Preparatory Courses / MSCS Prequisites

- 6 graduate certificate courses (3 credits each)
  - CPSC 5005 Data Structures
  - CPSC 5011 Object-Oriented Concepts
  - CPSC 5021 Database Systems
  - CPSC 5031 Algorithms
  - CPSC 5041 Computing Systems Principles I
  - CPSC 5042 Computing Systems Principles II

**Conditional admission:** Must complete the required prerequisite(s) with *a grade of B or better* within the first year.
Internships

• How many credits you can register?
  – 1 credit: at least 100 hours per quarter, working part-time (max of 20 hours/week)
  – 2 credits: at least 150 hours per quarter, working part-time (max of 20 hours/week)
  – 3 credits: at least 200 hours per quarter, working full-time (max of 40 hours/week)

International students must maintain full-time status except during vacation quarters
Internships

• Before starting your internship
  – Identify a faculty sponsor/advisor
  – Submit the following docs to the department for approval
    • Internship offer letter
    • Internship request form (*CPSC 5950 Internship* for course registration)
    • CPT support letter/form for international students
Internships

• After starting your internship
  – Internship Weekly Report
  – Project Agreement Form
  – Project Completion Form
  – Intern Evaluation Form

All are required to receive credit(s) for your internship!

• Internship Guidebook
  – URL: https://www.seattleu.edu/scieng/computer-science/student-resources/internships/
Advising

• Meet with your advisor each quarter
  – Discuss your programs of study
  – Course selection & schedule planning
• my.seattleu.edu online tool
  – Program evaluation
  – Search for courses + Registration
  – Create an academic plan
    • Must submit plan to advisor for approval at least once
Registration

• Check my.seattleu.edu for registration time
• Register as soon as possible after your registration time
• If you are unable to get into a class, please fill out the WISE (waitlist) form that is available from the CS webpage.
## Fall 2021 Class Registration

<table>
<thead>
<tr>
<th>MSCS Program Option</th>
<th>Full-time student</th>
<th>Part-time student</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Option</strong></td>
<td>CPSC 5110 (required) + CPSC 5520 (systems requirement) or CSPC 5610 (algorithm requirements)</td>
<td>CPSC 5110 (required)</td>
</tr>
<tr>
<td><strong>SE Specialization</strong></td>
<td>CPSC 5110 (required) + CPSC 5520 (systems requirement) or CSPC 5610 (algorithm requirements)</td>
<td>CPSC 5110 (required)</td>
</tr>
<tr>
<td><strong>DS Specialization</strong></td>
<td>Math 5315 (3 cr) CPSC 5305 (3 cr) CPSC 5520 (systems requirement) or CSPC 5610 (algorithm requirements)</td>
<td>Math 5315 (3 cr) CPSC 5305 (3 cr)</td>
</tr>
</tbody>
</table>

You may choose a different course if CPSC 5110 can be waived.
Academic Performance, Probation & Dismissal

- Will be on **probation** with cumulative and/or term GPA is < 3.0
- Immediate actions
  - Review your schedule with your advisor to make any necessary changes to your course load.
  - Review university policies regarding progression and course repeats
  - Arrange to meet with an advisor in the S&E Advising Center
- Conditions for removal from probation
  - You must earn a term GPA ≥ 3.0
  - You must earn no grade below B
- Failure to improve academic performance including violation of probation conditions could ultimately lead to **dismissal**
Other Academic Regulations

- Must attain a grade of **C or better** in all courses
  - Courses graded **C- or below** must be repeated
  - Graduate projects & CPSC 5890 Seminar requires **B- or better!**
- Must maintain a Cumulative GPA of **3.0 or better**
- SU has an academic honesty code
  - See SU Graduate Bulletin of Information
- You must apply for graduation
- 6 Year Limit
  - All degree requirements must be completed within six years after course work is begun
International Students

• Must maintain a full-time status (a minimum of 6 credits) except for the graduating quarter
• All international students can work on-campus for a maximum of 20 hours per week
• International Student Center hold for registration
• New MSCS student must contact ISC before class registration
• Main contact: ISC
Fellowships & Scholarships

- Office of Fellowships
  - [https://www.seattleu.edu/fellowships/](https://www.seattleu.edu/fellowships/)
- Student Financial Services
  - [https://www.seattleu.edu/sfs/](https://www.seattleu.edu/sfs/)
IT Architecture Competitions

End of Year Celebrations and Awards

Interview/Resume Workshops

Clubs

Personal Projects

September 2020
Women in Tech @ GHC
SU ACM Community Hours

Come play games, do homework, or solve Hackerrank problems.

CS Lounge (ENGR 401)
Every Friday
3pm to 5pm

Seattle University
ACM Student Chapter

HACK SU

PARIVEDA

COFFEE STUMPTOWN

SUGO

Come build the future with us

Amazon

Apply now
amazon jobs

CodeRank:
Programming Competition

Charlie Carson, a Software Engineer from Twitter, will talk to us about:
- Experience of working at Microsoft vs working at Twitter
- Big vs small teams
- Monolithic vs microservices
- Open source stack vs Microsoft stack
- Twitter’s Distributed Graph Storage Systems

Twitter Tech Talk!

ENGR 401
Thursday, April 6, 12:30 PM - 1:30 PM
RSVP at: http://sucs.club/twitter

Computer Science Department
Fall Mentorship Event

WHO: All First Year Computer Science Students

WHAT: Fall Mentorship Social + Pizza

WHEN: Tuesday – 11/12/2019 – 12:30-1:20pm

WHERE: Engr 401 (CS Lounge)

FREE SUBWAY

CS INTERVIEW PREP NIGHT

+Form teams of 3-5 to work on your choice of HackerRank or LeetCode questions.
+We will have a CS tutor, Taylor Hagarty, to aid teams on problems.
+Senior ACM representative, Lish N_webc, will be hosting a resume review and behavioral interview tips workshop.
+Snacks will be provided.

FEB 1, 4-8 PM, ENGR 401
Questions? Contact molinae5@seattleu.edu

Seattle University
ACM Student Chapter
Contact Us!

Prof. Zhu
MSCS Program Director
MSCS Advisor

Prof. Oh
CSFD Program Director
MSCS Advisor

Prof. Hanks
Chair
MSCS-DS Advisor

Prof. LeBlanc
MSCS-SE Advisor

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Prof. Larson
Associate Chair