Stony Brook University

MS in Computer Science

Program Orientation

C. R. Ramakrishnan, Graduate Program Director
Erez Zadok, Graduate Academic Advisor
Cindy Scalzo, Graduate Coordinator

Computer Science Department
Important Departments/Units

• Graduate Program, CS Department
  • C. R. Ramakrishnan (Graduate Program Director)
  • Erez Zadok (Graduate Advisor, MS Program)
  • Cindy Scalzo (Graduate Coordinator)
  • Himanshu Gupta (Graduate Admissions Director)
  • Lourdes Hartwell (Admissions Coordinator)

• Graduate School
  • Broader support, policy making for all graduate programs in the university

• Registrar and Bursar’s Office
  • Enrollment and fees payment

• Visa and Immigration Services (VIS)
  
We have NO control!
Graduate Handbook and FAQ

• Describes everything you need know about MS/PhD program in CS.
• Easily available from the departmental web page. Go to Students → Graduate.
• Read the latest version: Fall 2020 edition
• Also, read the MS FAQ.

Read the above carefully.
Contents

• Program Requirements and Standing
• Credits and Immigration-Related Issues
• Registration for first semester
• Responsible Conduct
• Internship and Employment
Graduation Requirements

Fall 2020 Handbook describes your graduation requirements.

• This is your default set of requirements
  • At the time of graduation, you may choose the requirements from a more recent edition of the Handbook (if anything has changed).
  • You cannot mix and match requirements from different years.
  • Generally there may be minor tweaks from year to year, but major changes are infrequent.
MS Program Overview

• Credit Requirement
  • At least 31 graduate credits (with restrictions)

• Breadth Requirement
  • 3 breadth courses from 4 areas.

• Project Requirement
  • Basic or advanced project
  • MS Thesis option

• Graduate Course Requirement
  • Minimum number of “lecture” courses

• Good Standing Requirement
Credit Requirement

• You need at least 31 “CSE” credits to graduate.
  • Most courses are 3 credits, but not all. So, need 10 courses plus some.

• Note: 31 credits are the minimum.

• Grade of C or better required to count a course for credit.

• Most common:
  • 8 lecture courses (24 credits)
  • Advanced project (6 credits)
  • Summer Internship (1 credit)
Breadth Requirement

Four breadth areas:

• Theory, Software, Systems, IIS.
• Each area has a list of 5-6 courses.
• Complete at least 1 course from 3 areas with a grade of C or better.
Theory Breadth

• CSE 512: Machine Learning
• CSE 540: Theory of Computation
• CSE 541: Logic in Computer Science
• CSE 547: Discrete Mathematics
• CSE 548: Analysis of Algorithms
• CSE 549: Computational Biology
Software Breadth

- CSE 504: Compiler Design
- CSE 505: Computing with Logic
- CSE 526: Principles Programming Languages
- CSE 532: Theory of Database Systems
- CSE 535: Distributed Systems
  - Was renamed from “asynchronous systems”
Systems Breadth

- CSE 502: Computer Architecture
- CSE 506: Operating Systems
- CSE 508: Network Security
- CSE 509: Computer System Security
- CSE 534: Fundamentals of Computer Networks
Information and Intelligent Systems (IIS) Breadth

- CSE 519: Data Science Fundamentals
- CSE 527: Introduction to Computer Vision
- CSE 528: Computer Graphics
- CSE 537: Artificial Intelligence
- CSE 538: Natural Language Processing
- CSE 564: Visualization
Project Requirement

Three MS options:

• **Advanced Project Option**
  2-semester sequence of a guided research project.

• **Thesis Option**
  2+ semesters of in-depth research project with a written thesis and a thesis defense.

• **Basic Project Option**
  1-semester project linked to a specific course.
Advanced Project Option

Must do a 2 course sequence CSE 523/524 (Advanced Project in Computer Science I and II).

• Two semester sequence on an individualized project under a faculty member.

• Cannot change advisor in midstream. If there is a change, must start afresh.

• Generally, CSE 593 (Independent Study) with the advisor is recommended before CSE 523.
Thesis Option

• Must do a total of 6-9 credits of CSE 599 (MS Thesis).
• Must write and defend the thesis.
• A 3-member committee must approve the thesis.
  • Thesis Advisor is a part of the committee.
• Thesis must be submitted to the Graduate School (which has hard deadlines).
Basic Project Option

• Must take CSE 522 (Basic Project in Computer Science).

• CSE 522 is a “cover” course for a regular project-heavy CS course (a “covered” course, e.g. CSE 506).
  • Students register for CSE 522, but actually attend the “covered” course.
  • Instructor may impose requirements above and beyond those of the “covered” course.
  • These courses are announced every semester via CSE 522 web page.

• CSE 522 may be used to satisfy breadth requirement via the “covered” course.
Comparison Between Options

• **Advanced Project:** Guided project over 2 semesters (6 credits).
  • Usually has a mixture of basic/applied research, and development under close supervision of an advisor.

• **Thesis:** basic/applied research over 2-3 semesters (6-9 credits).
  • “Research Apprenticeship” under the supervision of an advisor that usually leads to a strong publication.
  • Ideal for students pursuing careers in research (e.g., PhD).

• **Basic Project:** Primarily coursework based. (3 credits)
  • No individual directed project.
  • Ideal for students who did not/could not find a faculty advisor or want to take more lecture courses.
Moving Between Options

• No need to declare option in advance.
• Just need to fall under one option at the time of graduation.
• Courses specific to another option may not be counted towards your project-option requirements.
  • But will count towards 31 credits for graduation

• Switching project options:
  • Same adviser: need adviser and GAA/GPD approval, if you want credits from previous project option to count towards new option.
  • Different adviser: need new adviser and GAA/GPD approval. Past credits don’t count toward project option.
Graduate Course Requirement

<table>
<thead>
<tr>
<th>Project Option</th>
<th># Lecture Courses</th>
<th>Project course(s)</th>
<th>Remaining Credits for 31</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Project</td>
<td>8</td>
<td>CSE 522 (3 credits)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>(24 credits)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advanced Project</td>
<td>7</td>
<td>CSE 523/524 (6 credits)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>(21 credits)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MS Thesis</td>
<td>6</td>
<td>CSE 599 (6-9 credits)</td>
<td>4-7</td>
</tr>
<tr>
<td></td>
<td>(18 credits)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Lecture course is:
  - Any 500-level course **except** CSE 500, 522, 523/524, 587, 593, 596, and 599 (e.g., specialty/project courses)
  - Any CSE 601-638 (3-credit PhD-level courses)
  - At most 3 credits of CSE 698 (Teaching Practicum)
- Remaining credits can be satisfied by any CSE course
Proficiencies (Pre-requisites)

• Some strong students with non-CS undergrad are admitted to the program with additional proficiency requirements.
  • These requirements must be satisfied by the time of graduation.
  • Often have to take several undergraduate courses here
    • Grade of ‘B’ or better required in cover course (CSE 587)
• Special One-on-One advising for such students
  • Mandatory orientation: after this orientation.
  • As needed: meeting slots with Prof. Zadok (GAA)
• Bring your Admission Letter, Transcript, Syllabus, and Resume for the orientation and advising sessions.
How Many Semesters/Courses?

• For most, an MS is a terminal (last) degree
  • Last opportunity to take certain courses
• This MS program can be completed in 3 semesters
• Four semesters effectively required for MS Thesis option and students with proficiencies (pre-reqs)
  • Don’t overload yourself (esp. in 1st semester)!
  • Don’t take more than 12 credits “just to save tuition”
• Taking extra courses, perhaps staying 4th term, has small impact on time and cost... relative to industry salaries.
• Big difference between low-end and high-end MS jobs!
  • Salaries, job satisfaction, and lifetime earning
Good Standing Requirement

• At least 3.0 overall GPA to maintain good standing.
  • Min. grade for a course to count for graduation is \textbf{C}
  • GPA less than 3.0:
    • Academic Probation (can be kicked out of SBU)
    • Cannot graduate
    • No CPT/Internships

• No pending “I” (incomplete) grades

• Good standing is subject to maintaining ethical standards expected by the program.
  • E.g., no reneging on lab/internship/job offers.

• International students: must take a full-time load and be in good standing.
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Grad Level and ‘Full Time’

• Level:
  • G1 when admitted.
  • G2 after completion of 24 graduate credits
    • Determined by registrar, count all credits (even a C- grade)
    • 2 semesters in practice

• To be considered full-time
  • G1: must be registered for at least 12 grad credits.
  • G2: must be registered for at least 9 grad credits.

• The following students must be full-time:
  • International students
  • Students getting assistantships (GA/TA/RA)
  • Students in university housing
Registration Requirements

• Full time registration requirement: G1: 12 credits; G2: 9 credits
  • Unrelated to what credits are counted towards the graduation requirement. E.g.,
    • Grades lower than C
    • (U)nsatisfactory for pass/fail courses
    • Course repeated for replacing a grade (rarely approved)

• “Underload” (*part-time registration*) possible only in the graduating (final) semester.
  • Special petition, risky if don’t pass course(s).
Underload (save tuition)

Applies only to International Students

• In your final (graduating) semester, you may petition to be considered as full-time, even when registering for < 9 credits.

• Example: a student has 25 credits in first two semesters + summer. Can apply to “underload” with 6 credits.

• When petitioning for underload, courses registered must be sufficient for graduation.

• Underload petitions are reviewed by the VIS office.

• If something prevents an underloading student from graduating that semester, they cannot continue and have to return to their home country (without a degree!)
  • This is an immigration regulation.
  • If you’re caught in this situation we cannot do anything except feel sorry for you. But that does not materially change the situation.
CSE 698 -- TAing (save tuition)

• Students can take CSE698 (Teaching Practicum) for credit
• Tuition free: any credit over 12 (G1 or G2)
• Limited to max 3 credits (1 credit == 4 hrs/week)

• Qualifications:
  • New student with excellent UG grades
  • Existing student who took course and aced it

• Example:
  • Semester 1: 12 credits + 1 credit of CSE 698
  • Semester 2: 12 credits + 1 credit of CSE 698
  • Summer internship: 1 credit
  • Semester 3 (final): one 3-credit course + 1 credit of CSE 698 (underload of 4)
  • Saved 2 credits of tuition overall
    • 3 credits of CSE 698 can count as one “lecture course”
Internships

- Note: internship is not a requirement.
- You can get credit for internships in industry (CSE-596 or CSE-597).
  - Register in your project/thesis advisor’s section.
- For international students, such internships can be done as a part of Curricular Practical Training (CPT).
  - To be eligible for CPT, you must have been at Stony Brook for at least 2 regular semesters, be in good standing, and not have pending (“I”) grades.
    [This applies to underload applications as well]
- CPTs can now be approved for summer, fall, or spring semesters (repeated too)
  - See https://www3.cs.stonybrook.edu/~ezk/grad-res/index.html#ms
## Which Credits Count for ...?

<table>
<thead>
<tr>
<th>For...</th>
<th>This counts</th>
</tr>
</thead>
</table>
| Graduation (under CS control) | • Grade C or better (B or better in CSE-587), subject to breadth and project limits  
                                  • Grade ’S’ for pass/fail courses.  
                                  • CSE courses only (other than 2 approved AMS courses)                                                                                      |
| GPA                           | • All courses with posted grades (including C- and F).  
                                  • Pass/fail courses are not counted.                                                                                                         |
| Full time status              | Taking 12+ credits if G1; taking 9+ credits if G2; doing “underload” if last/graduating semester.                                         |
| G1/G2 status                  | All courses with posted grades other than F, U, or I (includes C-)                                                                         |
| Tuition                       | Not charged for credits above 12 in any semester (even if you're in underload or G2 status).                                            |
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Important Dates

Be familiar with graduate calendar
(www.stonybrook.edu → > Students → Useful Links → Academic Calendars)

- Aug. 24: first day of classes
- Aug. 30: drop deadline (w/o tuition penalty)
- Sep. 4: add/drop/swap deadline (drops later show a ‘W’ grade on transcript)
- Sep. 8-14: swap via petition only (rarely approved)

- Watch for waitlist movement near drop deadline
  - get off waitlists if you do not intend to take a class!
- We (in this department) do not control tuition and other fees!
Full Classes

• Classes may be full now, some may open up during the first week of classes (see next slide).

• New graduate handbook offers more course flexibility.

• Attend the first lecture of courses you want to take.
  • If the professor is collecting a list of students wanting to add into the course, give your name.
  • Based on availability, we will permit a subset of these students to add into the course.
  • Priority is for PhD and senior MS students
  • Petitioning to Grad Director/Adviser/Instructor is of no use.
Expected Availability of Seats

• Many classes are full; some students have registered for more courses than they intend to take.

• **Advising Hold** if you have over-registered:
  • You will not be able to lower the load later!

• Over-registered if your #lecture courses exceeds:

<table>
<thead>
<tr>
<th>Your Status:</th>
<th>On 1\textsuperscript{st} day of classes (9am)</th>
<th>On 3\textsuperscript{rd} day of classes (9am)</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1</td>
<td>&gt;4</td>
<td>&gt;4</td>
</tr>
<tr>
<td>G2</td>
<td>&gt;3</td>
<td>&gt;3 (or underload amount)</td>
</tr>
</tbody>
</table>

• We expect additional seats to open in various classes up in first few days of classes.
Registration Decisions

• For most students, it is best to take
  • at least 2 breadth courses and
  • at least 1 other course in the first semester.
  • Consider CSE 593 (Independent Study) to lighten the load

• If you have proficiencies (pre-reqs) to satisfy
  • Finish them as early as possible, within 2 semesters.
  • [Attend special orientation or see GAA (Prof. Zadok)]

• If you want to do Advanced Project or Thesis
  • Get advanced exposure in the first semester.
  • Also, attend some research seminars.
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RCRS

Responsible Conduct in Research & Scholarship

• Federal funding agencies require every researcher to undergo training and earn RCRS credits.

• Such training is especially critical when handling sensitive data (human subjects, health and social media data)
  • No matter whether the research is federally funded or not.

• University is adding steps so every graduate student appointed as RA is appropriately trained.
  • We are setting up procedures within our department to help graduate RAs trained (e.g., CSE600, this orientation).
  • When you’re appointed, you’ll get email from from ResearchCompliance@cs.stonybrook.edu with instructions.
  • RCRS will become a part of “Good Standing” requirement.
Academic Dishonesty  [1 of 3]

• Do your own work for all exams and assigned class work.

• Do not copy from anywhere, discuss with anybody, or solve problems in group.
  • Unless specifically allowed by an explicit class policy.
  • Check with instructor on what is allowed in looking for solutions (e.g., github). If allowed, cite sources where you got help.

• Guard your work/computer so that others cannot copy.
Academic Dishonesty [2 of 3]

• **Serious consequences:**
  - Loss of grade: Many profs will give ‘F’ in the course.
    - Very hard to recover from low GPA in first semester.
  - Possible loss of “good standing”.
    - Bad GPA, no CPT, no underload
  - Possible dismissal from program
    - With subsequent problems with visa status

• **Every year, a few students face serious career difficulties due to academic dishonesty.**
Academic Dishonesty  [3 of 3]

• Do not be influenced by the fact somebody else didn’t get caught.

• Dishonesty may be discovered much later than the act itself.

• If you are an international student, be mindful of cultural differences.
  • What may be acceptable in your previous university could be considered ‘dishonesty’ in a US university.
  • When in doubt, ask the professor.
  • Ignorance of rules is not a valid defense.
Research Misconduct

• Plagiarism
  • Example: copy from somebody else’s paper and use it as part/whole of your project report, thesis.

• Falsification
  • Fabrication: Make up data, results.
  • Manipulation: Manipulate an experiment to hide actual performance and to show what you want.
  • Obfuscation: Hide critical facts, but reveal some others.

• Serious consequences on your graduate study. Possibilities exist for retraction of degree even after graduation.

• If you feel pressured, talk to advisor or graduate program staff.
Professional Misconduct

• Accepting an internship/job offer (via campus career center or otherwise), or accepting an offer to join a research lab, and then turning it down later: "reneging" on an offer.
  • Reflects poorly on you as well as the department
  • Employers may not come for campus interviews for future students.
  • Blacklisted students and departments.

• False representation in resume for jobs/internships.
  • Serious consequences on your graduate study. Possibilities exist for retraction of degree even after graduation.
Ethical Violations: Procedures

Violations reported to Program Director.

• Accusations and penalties for violations may be appealed to special graduate committee
  • Formal proceedings, judged by a committee of 2 graduate students and 2 faculty
  • Recommendations sent to Program Director

• For serious violations, finding of guilt may lead to dismissal from program.

• Minor violations recorded in student’s file.
  • These records are destroyed at graduation time if there are no other violations.
  • Second violation is grounds for dismissal from the program.
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  - Separate presentation, early CSE 600 talk of semester by Zadok
Internships and Employment

• Separate presentation (Zadok)
  • Usually at start of semester (announcement to all grads)

• CPT: Curricular practical Training
  • Apply via VIS office, approved by dept.
  • Used for summer internships, repeatable summers
  • Need letter before/after internship to summarize work (ensure it is an integral part of your education)

• OPT: Optional Practical Training
  • Apply via VIS office, approved by dept.
  • Most often used for first job after graduating
  • Can be used only once
  • Limit of 12 months since approval (then need proper work visa)
Next Steps

• Very important:
  • Get departmental email id (xxx@cs.stonybrook.edu)
  • Activate Piazza.com “Grad” forum
  • ... which is on grads@cs.stonybrook.edu email list.
  • Important messages sent to these addresses. No excuse for not reading them.

• Review Graduate Handbook and FAQs.
• Be familiar with registration calendar.
• Ethics and professional responsibility:
  • Act ethically in coursework and research
  • Watch out for RCRS requirements coming soon.
Other issues not yet discussed [1]

- Transfer from MS to Ph.D. program
  - Review Handbook and speak to faculty
  - Courses done during MS can be counted for PhD qualifiers
  - Admission will require strong recommendations from SB faculty
Other issues not yet discussed [2]

• TA
  • Few students are appointed as Part Time TAs or graders
  • Responsibilities are generally limited to grading, but varies by course
  • Appointment is by invitation only; resumes and mails sent without solicitation will not be considered
  • Very few opportunities this semester, but keep this in mind for subsequent semesters
  • CSE 698 (Teaching Practicum) possible up to 3 credits

• Anything else
  • See Handbook
Questions?