Student Handbook

Computational Linguistics
Master's Degree Program

(Two-Year MS, 5th Year B/MS)

Brandeis University

2023-2024

Contact Information

Computer Science Department Office — Volen 261

- Computer Science Department – **compsci@brandeis.edu**
- Linguistics & Computational Linguistics programs – **lingcl@brandeis.edu**

Phone: (781) 736-2700 Fax (shared): (781) 736-2741

Mailing Address for COSI Dept. Office, Faculty, Staff, and Graduate Students

Department of Computer Science, MS 018
Brandeis University
415 South Street
Waltham, MA 02453 USA

Mail sent to you at this address will be placed in your folder in the Department Office for you to pick up.

Volen Building Main Office — Volen 206

Once you have a Brandeis ID card, it is this office that adds to your card the ability to access the Volen building, doors within Volen, and the Vertica Lounge during off hours when these spaces are locked.

Staff Who Support Our Program

Title	Name	Office Location	Email	Phone
CL MS Academic Administrator	Amy Smack, Division of Science Graduate Affairs Office	Kosow 104	amysmack@brandeis.edu scigradoffice@brandeis.edu	(781) 736-3148
Linguistics and CL Program Coordinator	Saebom Kim	Volen 261	saeboms@brandeis.edu lingcl@brandeis.edu	(781) 736-4760
COSI Department Administrator	Michael Golitsyn	Volen 261	golitsyn@brandeis.edu compsci@brandeis.edu	(781) 736-2701
COSI Masters Programs Coordinator	Anne Gudaitis	Volen 261	gudaitis@brandeis.edu compsci@brandeis.edu	(781) 736-2723
COSI Chief Systems Administrator	Christopher Allison	Volen 125	chris@cs.brandeis.edu guru@cs.brandeis.edu	(781) 736-2740
COSI Systems Gurus			FAQs: http://pages.cs.brandeis.edu/~guru/ Email for help: guru@cs.brandeis.edu	

CL MS Graduate Representatives

Graduate Departmental Representatives ('Grad Reps' or GDRs) are students who represent student concerns to the faculty, plan informal student get-togethers and study sessions, and are a resource for the CL MS student body. We typically have one rep from the incoming class, and a second from the graduating class. Those who serve as rep their first year often continue into the second year, if they choose.

Selected Faculty for Courses Taken in CL Program (alphabetical by last name)

Please see the Faculty Guide for further information, including websites, phone numbers, and research and teaching profiles for these and other faculty, or the Directory for just the contact information.

Peter Anick	Volen 256	panick@brandeis.edu	
Dylan Cashman	Volen 212	dylancashman@brandeis.edu	
Antonella Di Lillo	Volen 254	dilant@brandeis.edu	
Lotus Goldberg, Vice Chair	Volen 252	lmgold@brandeis.edu	(781) 736-3265
Timothy Hickey	Volen 138	tjhickey@brandeis.edu	
Constantine Lignos	Volen 139	lignos@brandeis.edu	
Sophia Malamud, DGS	Volen 215	smalamud@brandeis.edu	(781) 736-2225
Keith Plaster	Volen 124	kplaster@brandeis.edu	
Jordan Pollack, CS PhD DGS	Volen 213	pollack@brandeis.edu	
James Pustejovsky, Chair	Volen 258	jamesp@brandeis.edu	(781) 736-2709
Liuba Shrira, CS Vice Chair & CS MS DGS	Volen 260	liuba@brandeis.edu	
Marc Verhagen	Volen 216	marc@cs.brandeis.edu	
Ben Wellner	Volen 256	wellner@brandeis.edu	
Nianwen (Bert) Xue, CS Chair	Volen 253	xuen@brandeis.edu	
Chuxu Zhang	Volen 304	chuxuzhang@brandeis.edu	

Important Brandeis Offices and Websites

As a graduate student, you often use different campus offices than do Brandeis undergraduate students. Additionally, the contact person in a given campus office (e.g. in the Registrar's Office) is sometimes different for graduate versus undergraduate students.

Generally, whatever you need that is not done by CL MS advising faculty, the Division of Science Graduate Affairs Office (Amy Smack is your contact in this office), the Ling/CL MS program coordinator, or the COSI department office is very likely to involve either the GSAS "Graduate School of Arts & Sciences" office, the OGA (formerly known as GSA) "Office of Graduate Affairs", the Registrar's Office, or, for international students, the ISSO office. The websites for these offices have a lot of information on them that is extremely helpful and relevant for you (though sometimes a bit difficult to find within each site!).

Especially noteworthy:

► The Schedule of Classes for individual semesters

- This can be found at the **Registrar's Office website**, under the 'Registration and Enrollment' link from the menu on the left. The Schedule of Classes lists the actual courses being offered (or, for previous terms, that were offered) in a given term, including their instructor, time slot, and (when available) room location.

- *Important usage notes:*
  - At the top of the Schedule of Classes page for any term, you can select the term (e.g. 'Fall 2023'), the course level (e.g. 'Undergraduate'), and the discipline (e.g. 'Computer Science'). Whenever searching for courses, we recommend always changing the course level from its default setting of 'Undergraduate' to 'All'.

    The 'Undergraduate' setting will bring up only courses below 100-level (=1 to 99) and 100-level courses, *leaving out* graduate 200-level courses. CL MS students take courses in all three levels (below 100, 100-level, and 200-level), and selecting 'All' ensures that every course being offered that semester will appear.

  - Courses like independent studies, theses, and internships will not appear on the Schedule of Classes unless you check the 'Include Independent Instructional Classes' box at the top of the page. The default is for this box NOT to be checked, so you need to check it in order to view these courses.

► The University Bulletin:

- This is the Brandeis course catalog, found at the **Registrar's Office website** by selecting 'University Bulletin' from the menu on the left, and then choosing 'Current Bulletin' (or, for the following year yet to start, 'Provisional Bulletin').

- The Bulletin does not have information specific to a given term, but instead lists all courses that a discipline offers in general, along with a complete description of the course.

- **Note on listings of course offering frequencies:**
  The information in the Bulletin about how frequently a course is offered (e.g. 'usually offered every second year') and sometimes about who the course's instructor is or its prerequisites (especially for CL as opposed to regular CS students) is sometimes not up to date. For more current information, you should check with the advisor and/or chair of the discipline in question for instructor and course offering frequency; for the COSI and LING courses that comprise the CL MS curriculum, the CL MS Advising Faculty generally have the most up to date information about course offerings in upcoming terms.

The Graduate School of Arts and Sciences (GSAS) Office

► Bernstein-Marcus, MS 031 — (781) 736-3410 — http://www.brandeis.edu/gsas

This website has many helpful things for graduate students.

General issues for Graduate Students handled by GSAS:

Admissions (including enrolling in Summer terms)
Financial aid, fellowships, student loans, other funding issues (including health insurance)
Tuition payments and amounts
Academic standing issues (including Leaves of Absence and withdrawing from the University)
Part- vs. Full-Time student status
Course Assistant information
Conference and research awards
Career services, including some assistance with searches for non-academic jobs
University degree requirements (including Residency Requirements)
Graduation procedures, including filing petitions to graduate and ordering gowns for commencement
Thesis submission procedures

For specific GSAS contacts that can help with different issues, please see the GSAS staff directory by subject page.

The Office of Graduate Affairs (OGA, formerly Graduate Student Affairs/GSA)

► Kutz 130 — (781) 736-3546 — https://www.brandeis.edu/graduate-affairs/

General issues for Graduate Students handled by the Office of Graduate Affairs

Workshops for students on time management, managing finances, etc.
Connecting students with on campus services
Off campus housing (best source of information on this!)
Transit passes
Running a campus food pantry
Overseeing the Graduate Student Association and Graduate Student Groups
Running social programming across graduate programs

The Registrar's Office

► Kutz 121 — (781) 736-2010 — http://www.brandeis.edu/registrar

General issues for Graduate Students handled by the Registrar's Office:

Course enrollment, including adding/dropping courses of all types
The Academic Calendar, including dates for the start and end of classes each term, for the final exam period, and for holidays
Deadlines for graduating—including deadlines for filing the relevant forms and depositing theses
All other deadlines and date-related to-do items
Forms for adding and dropping courses, and for giving permission of various sorts (GSAS also has some forms relevant to graduate students on its site)
Processing Degree Checkouts for students to verify that students have met program requirements

Information Available from the Registrar's Office Website

- In addition to the Schedule of Classes and University Bulletin described above, the Registrar's Office Website is the location for the Academic Calendar for each term, and for special dates relevant just to graduate students.

- The Academic Calendar link is on the Registrar's Office main webpage.

- On Academic Calendar page, scroll down to find links for:
    - The complete academic calendar for individual semesters (e.g. 'Fall 2023')
    - The **Additional Deadlines for Graduate Students** page, with the current school year's graduate-student-specific dates. Many of these are essential for you to be aware of as you start your final year in the program (so 5th year for B/MS students, or the final year for advanced Two Year Students)!

The International Student and Scholars Office (ISSO)

► Kutz 215 — (781) 736-3480 — http://www.brandeis.edu/acserv/isso

ISSO supports all of Brandeis' international students and scholars. This office determines visa eligibility, and prepares and issues visa documents. International students should already be in touch with this office, but its contact details are included here, just to have handy. Deadlines involving visa and other issues for international students are often very rigid, and are set not by Brandeis, but by larger governmental agencies in this country. International students are thus advised to be especially on top of things, to apply for all necessary permissions well ahead of schedule, and so on.

Every issue, concern, and question is extremely individual to each student, and US rules and policies can change quickly. The ISSO staff work painstakingly to be very up to date on things, and to be extremely careful and precise in every answer and piece of guidance they give out. It is incredibly important to get your answers from the ISSO directly, rather than from other students or people you know—even if they share one or more major details with your situation (e.g. same home country or same type of visa), and even when they seem certain of the information.

So: whenever an international student has any questions or new developments regarding their Visa or any of the associated regulations (e.g. travel, CPT, OPT), your ISSO advisor should be the first person you contact. They advise international students on rights and responsibilities based on each student's

individual situation, and provide guidance regarding issues that may impact your legal status. Their website also has a collection of useful information for international students.

An important additional note: most international students who enroll in an internship on or off campus may be required to obtain Curricular Practical Training (CPT) authorization from the International Students and Scholars Office (ISSO) BEFORE beginning the internship. International students interested in completing an internship, whether for their Exit Requirement or just for elective credit, must email isso@brandeis.edu to schedule an appointment with their ISSO advisor to review CPT requirements. For more information on internships (for the CL MS Exit Requirement and otherwise), please see the 'Exit Requirement' section below. For more information regarding CPT, please visit:
https://www.brandeis.edu/isso/current/employment/index.html.

The Main Brandeis Website

- http://www.brandeis.edu

Finding Contact Information for Brandeis Students, Faculty, and Staff

From the 'Popular Resources' link in the top left corner of the main Brandeis web page, select 'Directory'. From here, you can search by name, email address, or Brandeis UNet ID to find as much contact info as the system has for faculty, students (of all levels), and staff. This minimally includes an email address, and often also a phone number and campus location.

Brandeis Campus Maps

- http://www.brandeis.edu/about/visiting/directions.html

Clicking 'interactive campus map' from this page will take you to a google map of campus. It is helpful to note that, after scrolling down to the bottom left corner of this page, you will also find links to PDFs of non-google maps which some find easier to interpret than the google map. One such PDF is in black and white and one in color, and both will print fairly well.

Overview of Student Support Resources

Primary Immediate Contacts for Assistance

Other sections of this handbook include information about the most immediate contacts for CL MS student assistance, which very often are one or more of the following:

- the CL MS Director of Graduate Studies, who is the head advisor (Sophia Malamud)
- other CL MS advising faculty (Lotus Goldberg)
- the CL MS Chair (James Pustejovsky)
- the CL MS Interim Career Advisor (Constantine Lignos)
- the CL-specialized full-time faculty (Constantine Lignos, James Pustejovsky, Nianwen Xue)
- the Ling-specialized full-time faculty (Lotus Goldberg, Sophia Malamud, Keith Plaster)
- the Division of Science Graduate Affairs Office (Amy Smack)
- the Ling/CL programs coordinator (Saebom Kim)
- the COSI department staff (Michael Golitsyn, Anne Gudaitis)
- your CL MS Graduate Representatives.

Additional Sources of Support on Campus

Additional sources of major support beyond the CL MS Program, CS Department, and the Division of Science include GSAS (Graduate School of Arts and Sciences) and the OGA (Office of Graduate Affairs).

Outside of this general hierarchy of places to go to for help, there are various other entities on campus who are here to support students. These resources below are dedicated to supporting graduate students.

- ***The Graduate Student Association (GSA)****:*
  Supported by the Office of Graduate Student Affairs, the GSA is an independent student body that represents all graduate students, providing a platform for them to raise issues and concerns, and build community. If you have a concern about an issue affecting graduate students that extends past your program, department, and the Division of Science, the GSA is a good group to talk to. To connect with them, visit their website to see the current year's grad student executive committee.

There are some offices on campus that specialize in specific topics, and who will almost always be the best resource for those topics:

- ***The Office of Research Administration (ORA)****:*
  ORA, which reports to the Vice Provost for Research, can help with issues related to research integrity and compliance. This would be the office to contact directly if you want to discuss the possibility of research misconduct.

- ***The International Students and Scholars Office (ISSO)*****:**
  As described above in the 'Important Brandeis Offices and Websites' section above, this is a very important resource for all international students on campus.

- ***The Student Accessibility Support (SAS) Office*****:**
  If you are a student with a disability and in need of academic or non-academic accommodations, this office can support you and help you navigate this process. The definition of a person with a disability is broad, and many students who do not think of themselves as having a disability may

qualify for support under the law. Even if you are not sure if you will qualify, you are encouraged to reach out to SAS.

- ***The Office of Equal Opportunity (OEO):***
  There are some topics that responsible reporters on campus cannot keep confidential, and those are issues of discrimination, harassment, or sexual misconduct. The Office of Equal Opportunity (OEO) addresses these issues, and provides information regarding support resources, information about taking action (both Brandeis-internal resolution processes and criminal action), inquiries and investigations into concerns, processes to address grievances, and training for the Brandeis community. Please visit their website for contact information and steps (and an online form) to file a report. You are also welcome to contact a resource listed above for support or advice about these topics, but they will be obligated to share the issue with OEO.

If you would like to have a *confidential* conversation with someone on campus, the following are our on-campus confidential resources:

- ***The Brandeis Counseling Center (BCC):***
  The BCC provides counseling for students in times of stress, and encourages them to ask for help with their most immediate concerns. For students with mental health issues and needs that are more intensive or longer term, they serve as a first-stop triage and referral service to psychotherapy and/or medication providers off campus. These services are available to all students, regardless of whether they have the Brandeis student health insurance plan or not. If you are struggling and need someone to talk to, we encourage you to reach out to the BCC.

- ***The Prevention, Advocacy, and Resource Center (PARC):***
  PARC provides education, empowerment and support related to sexual assault, sexual harassment, dating/domestic violence and stalking. This group is a confidential, student-centered resource serving all members of the Brandeis community who have been impacted by violence.

- ***The University Ombuds:***
  This office is a confidential, independent, impartial, and informal resource for all members of the Brandeis community. They provide a safe staff to talk confidentially and off-the-record about difficult situations and offer conflict resolution support.

- ***The Chaplains in The Center for Spiritual Life:***
  The Brandeis chaplains offer counseling, support, and community to students of all faiths. They oversee on-campus worship and student religious life while also offering community support in times of joy and crisis.

Email Lists for CL and Linguistics

Beginning last year, all Brandeis email lists are Google Groups, and so end in -group@brandeis.edu. Once on a list, you can log in to https://groups.google.com/ with your Brandeis UNet ID to change your settings for that group.

It's important to read the emails that come to these lists, since they will often include important information for you to know about.

Brandeis CL Email Lists

There are various email lists for the CL community at Brandeis,. These include the following, and are managed by Amy Smack—who makes sure the appropriate people are on the appropriate lists.

compling-all-group@brandeis.edu	All CL MS + PhD students, undergrads advanced in their study of CL, CL postdocs & visitors, Ling/CL faculty & staff
compling-ms-firstyr-group@brandeis.edu	Students in their first year in the CL MS Program— First year Two-Year students + 5th Year B/MS Students
compling-ms-advanced-group@brandeis.edu	Advanced CL MS Students— Two-Year students advanced beyond the 1st year + 5th Year B/MS students

The Brandeis Linguistics Email List

ling-group@brandeis.edu, also called the 'ling list', is an email list for general linguistics announcements at Brandeis. Most posts on this list are specifically for linguistics undergraduate students or courses, and this is the sole list for such postings—but announcements about new linguistics courses, conferences, and so on are also of interest to CL students.

All CL MS students should find they have already been added to this list, just so we can also let you know about straight linguistics things you might be interested in. But if you find that you are not on the list, send an email to Saebom Kim and she can add you.

COSI Email Lists

Since CL MS students are also graduate students in the COSI department, they are also all on the COSI graduate student list, csgrads-group@brandeis.edu. You should again find that you are automatically on this list, but if you have any issues, send an email to the list's manager, Anne Gudaitis, for help.

The Logistics of CL MS Course Registration

Using Workday to Register

Workday is the system now used to register for courses (replacing a now-discontinued system called Sage), and also allows you to access information about your own student record. For example, you can view your academic progress or check which required teaching training sessions you have completed. If you work an hourly job, you will also enter your hours there.

Workday unfortunately poses some logistical challenges, and also has some issues that are still being smoothed out. It is helpful to keep in mind that there are several types of courses that require a registration process that bypasses Workday completely. See the Registration Procedures section below for full details.

You will find that some courses require prerequisite overrides or the permission of the instructor, even when you have been instructed to enroll in them as degree requirements. Prerequisite overrides involve the instructor waiving the prerequisite requirements so that you can enroll in the course, which is fairly common for graduate students. (Note that, for any course whose prerequisites are part of your Brandeis record, any problems adding the course in Workday are likely due to glitches in need of being worked out, and therefore can be fixed by contacting the right people.) On the other hand, getting a "not eligible" or another error message might simply indicate that your prerequisites are not in the system (e.g., if you are new to Brandeis) or that the course requires instructor permission or a different process. Read on for more details on these situations!

You can find the Workday icon from your Brandeis login page. There are some helpful videos to assist you with course registration in Workday at the Workday@Brandeis page (you will need to log into your Brandeis account to view the videos).

There are many job aids that explain how to complete tasks in Workday. We strongly recommend that you read through these how-to documents on the Workday webpage, listed under the "Planning and Registration" section.

Some of the most helpful Job Aid documents are the following (note that viewing these requires logging in with your Brandeis credentials):

- Search and Register for Courses
- Request Prerequisite Override or Permission to Enroll
- Troubleshooting Registration
- Manage Waitlist
- Drop a Course (this provides instructions for dropping a course by Sept. 14th, the end of the registration period; after this date, you will need to submit a Course Change Form to the Registrar's Office).

If you encounter any problems registering, please email Amy Smack and, if needed, file a ticket with the general ITS/technology help service by emailing help@brandeis.edu.

When to Register

Brandeis holds two registration periods for each semester. The first 'pre-registration' period typically runs for roughly one week during the second half of the preceding term: pre-registration for Fall is often in April of the preceding Spring term, and pre-registration for Spring is often in November of the preceding

Fall term. The second is the regular registration period. This used to begin a week or so before the first day of classes for a given term, but recently it's begun to open much earlier—so that e.g. regular registration for Fall this year opened in July. The regular registration period typically ends after the term's first couple of weeks of classes. Exact dates can always be found on the Academic Calendar for that semester.

You will not have trouble registering for required courses. However, some electives—especially courses whose primary audience is undergraduate students—often do fill up during the pre-registration period held during the preceding term. This is especially true for many introductory-level math and language courses, and some COSI courses for instance. For these, it is important to register for the course as early as possible during the term's pre-registration period, since the courses may well already be full by the end of the pre-registration period. If you wish to register for such a course that is full, it can sometimes still be possible to take the course, and so we recommend contacting the instructor (or, for math courses, the Math Department Administrator) to see if you might still be able to enroll

LING courses other than the seminar courses LING 111–Phonology II, 121–Syntax II, and 195–Intro to Research in Ling & CL do not limit enrollment, and you will not have trouble getting into them. COSI elective courses that are listed in Workday and the online Schedule of Classes as already having reached their enrollment limit, and thus full, can sometimes still accommodate graduate students, and so we recommend completing the course registration process and being added to the course's waitlist; see the Job Aid doc "Manage Waitlist" for more information.

As described in the 'Course Selection' section of this handbook, the course schedule for each student is tailored to the student's individual requirements (in terms of computer science and/or linguistics background needed) and academic interests. In order to achieve this, we hold group and individual advising meetings with all new CL MS students before the first day of classes of the semester, and via office hours and appointments for returning students. For new students in the Program, these meetings follow the CL MS new student orientation meeting, where general course and advising information and guidelines are provided.

Students in their first semester in the Program should register in Workday for their core course COSI 114a and for any COSI and Math electives they are considering as soon as registration starts, and for their initial best sense of their course schedule once orientation and their individual advising meeting has finished. Continuing students in all subsequent terms should register in Workday for their initial best sense of their course schedule during the previous semester's pre-registration period, which is important for our Program and the University to make preliminary estimates of course enrollment numbers. Both new and continuing students should then make any final changes (including adding or dropping courses previously registered for, as needed) before the last day of the semester's regular registration period.

You can attend any courses you like on the first day of classes, regardless of whether or not you have formally added the courses in Workday. However, we recommend that you do add these courses in Workday and, if you can't add them because of a conflict with another course, that you email the instructor. 'Shopping' for classes in this way is common and encouraged, and is helpful if you have any courses that you are not yet positive you want to take. It is optimal when possible to attend from the first day any course that you think you might end up enrolling in, even if you're not sure—so that you don't miss any material or information you'll need for it later.

The Last Day to Add or Drop a Course – Strict Deadlines

- After the regular registration period for a semester ends (usually around the second week of September in Fall terms, and the 3rd or 4th week of January in Spring terms), it is NO LONGER

possible to add a course. Thus, by the close of the regular registration period (for this Fall 2023, the **deadline is September 14th**), you should be sure to have added in Workday all courses that you think there is a chance you will complete. You can *drop* them later, if need be, but you cannot *add* them later.

- The deadline for graduate students to DROP courses or change status to a formal AUDIT extends much later into the term; for this Fall 2023, the **deadline is November 14th**. Thus, any courses that you added in Workday during the registration period can be dropped (with the consent of CL MS advising faculty) up to this time.

- The add and drop deadlines for graduate students are adhered to very strictly by the Registrar's Office. They may not allow any exceptions (even if asked by CL faculty!), and it is thus very important for you to keep aware of these dates each semester. In particular: be sure that you can complete and do well in all courses remaining in your schedule on Workday beyond the last day for graduate students to drop courses. It may not be possible to drop them later, if troubles arise.

An Overview of Courses & Situations Requiring Special Permission

The Registrar's Office requires that special permissions of various sorts be obtained for certain courses.

Courses Requiring a Form to Enroll

Certain courses cannot be added in Workday, but are instead added to your course schedule by submitting a Petition for Graduate Credit Form or a Course Change Form (also known as the "Add/Drop Form") from the Registrar's Office.

Any course for which this is the case will appear in your Workday course schedule for the term once the Registrar's Office has processed the form you hand in. Courses added this way have the same deadlines for adding and dropping courses as regular courses added by using Workday directly. You can find all Registrar's Office forms on its website's 'Forms' page: http://www.brandeis.edu/registrar/forms.

Courses below 100-level typically require special permission for graduate students to enroll in. This is frustrating, since they are taken frequently by Science graduate students, not only in our program but in other Science programs as well.

Courses Requiring Instructor Permission

For some advanced courses and for independent instruction courses, students must request permission to enroll in the course through Workday. For detailed steps on how to do this, please review the Job Aid "Request Prerequisite Override or Permission of Instructor".

- Some courses (especially advanced CL and COSI courses, which may require several prerequisite courses) require instructor permission in order to add the course. This is so that the instructor can verify that every student who enrolls has the background needed to take the course.

- Independent Instruction Courses including independent studies, internship courses, and the Thesis, Internship, and Capstone Project Exit Requirement courses (see the 'Exit Requirement' section below for more on these) also require permission of the instructor within Workday.

Registration Procedures for the Different Course Types Taken by CL MS Students

1. The Group A Background Courses COSI 10, 12, 21

CL Advising Faculty determine whether you need each of these during your individual advising meeting. Once we know which of these, if any, each of you needs to register for in each term, Amy Smack will arrange for the Registrar's Office to enroll you in the appropriate course(s) and section(s). This means that you will NOT need to add them in Workday yourself, and you do NOT need to file a petition to be allowed to add them.

NOTE: In the Fall term of the first year, if you might need COSI 10 or 12, but haven't yet taken the COSI 12 Placement Exam and/or do have not received a final determination from CL Advising Faculty for which course to take, we will initially enroll you in a section of both COSI 10 and 12. Please reach out to Amy as questions arise.

2. All Other Courses Below 100 – e.g. COSI 29, MATH 15a, but NOT COSI 10, 12, & 21

There are three different sets of instructions for you to follow here, varying with the course's subject area. **All three scenarios bypass Workday entirely**, instead using forms that you need to file. You sometimes also need to send specific emails as part of the process.

a. COSI Electives below 100 (e.g. COSI 29) – Register with a Form, Bypassing Workday
   - Fill out the Petition for Graduate Credit form.
   - Email the instructor to obtain their signature (if there are prerequisites that you meet but that are not reflected in your Brandeis record, explain this to the instructor).
   - Get the signature of the Advising Faculty (Sophia or Lotus) on a paper form, or via email by sending the form to clms-advising-group@brandeis.edu.
   - Then, email the form with all needed signatures to the Registrar (registrar@brandeis.edu), cc'ing clms-advising-group@brandeis.edu (Sophia, Lotus, and Amy get email at that address).

b. MATH Courses below 100 (e.g. MATH 15, 20) – Register with a Form, Bypassing Workday
   - Make sure the section is not full, then email Catherine Broderick (cbroderi@brandeis.edu) and cc clms-advising-group@brandeis.edu to ask for Math Department approval for you to try to get into the class (explain that you are a CL MS student, state your year in the program).
   - If Catherine Broderick approves, register using the Petition for Graduate Credit form. Follow the procedure for registering with this form for COSI courses with numbers below 100 above.

c. Courses below 100 that Do NOT Count for the Degree (e.g. languages, business) – Register with a Different Form, Again Bypassing Workday
   - Download the Course Change form (Add/Drop form) from the Forms section of the Registrar's Office website.
   - Fill out the top 'Student Information' and 'Registration Information' portions of the form.
   - Email the instructor to get their signature.
   - Email the clms-advising-group@brandeis.edu to get Sophia or Lotus's signature.
   - Then, email the form and all the signatures to the Registrar (registrar@brandeis.edu), copying clms-advising-group@brandeis.edu (Sophia, Lotus, and Amy).

3. All Courses 100 and above, Including Required Core, Background, and Elective Courses

a. Courses 100 or above with no Prereqs, or whose Prereqs You Completed at Brandeis
   - Use Workday to register.
   - Search for the course in Workday, and add it to your schedule in the regular way [job aid for searching and registering for courses].

b. Courses 100 or above with Prerequisites that You Did **Not** Take at Brandeis
   - If you took the the prerequisites, but completed one or more at another institution so that they are not part of your Brandeis Workday record, or if you took courses at Brandeis that gave you equivalent prerequisite knowledge but aren't the specific prerequisite courses listed for the course:
     - Email the instructor, say that you're a Computational Linguistics MS student, what year you're in, and explain your background and preparation, including any other courses you took at Brandeis or elsewhere (name the school(s)) that you feel are relevant. Ask whether they feel you could do well in the course, and whether they'd allow you to enroll.
     - If the instructor allows you to enroll in the course, request a prerequisite override. [job aid for requesting prerequisite override]
     - Once the override has been granted by the instructor, you will get an email confirmation letting you know.
     - You must then ***go back in to Workday, and add the course*** in the regular way, which the system should now allow you to do [see job aid for searching and registering for courses]**.**
       - **IMPORTANT: you still need to register for the course in the usual way after the instructor grants you an override. The override does NOT automatically register you for the course!**

4. Registering for over 22 credits (more than 5 courses)

GSAS students have a default limit of 22 credits that they can register for. If you're trying to register for a sixth course (e.g., if you are shopping several electives, or in the unlikely event that you intend to complete all 6 courses):

- For courses for which you would otherwise need to use a form rather than Workday to add (so, the processes described above that require either the Petition for Graduate Credit form or the Add/Drop form):
    - Send a single email, attaching all forms with all needed signatures, and explaining that you'd like to add this course as an overload to your schedule. Send this to Richard Cunnane (rcunnane@brandeis.edu), cc'ing Alyssa Canelli (acanelli@brandeis.edu) & clms-advising-group@brandeis.edu (Sophia, Lotus, and Amy).

- For courses that you would normally be able to add directly in Workday, but for which you would normally need to request a Prerequisite Override because you have prerequisite courses and/or knowledge that are not reflected in your Brandeis record:
    - First email the instructor to get their permission to register, explaining that you have the prerequisites (no form required).
    - Then, forward the instructor's email granting you permission, adding that you'd like to add this course as an overload to your schedule, to Richard Cunnane (rcunnane@brandeis.edu), cc'ing Alyssa Canelli (acanelli@brandeis.edu) & clms-advising-group@brandeis.edu (Sophia, Lotus, and Amy).

- For courses that you would normally be able to add directly in Workday, and for which you would normally NOT need to request a Prerequisite Override – because the course has no prerequisites, or the prerequisites ARE reflected in your Brandeis record:
    - Simply email Richard Cunnane (rcunnane@brandeis.edu), cc'ing Alyssa Canelli (acanelli@brandeis.edu) and clms-advising-group@brandeis.edu (Sophia, Lotus, and Amy), saying that you'd like to add the course as an overload to your schedule.

Strict CL MS Course Dropping Policy – CL Advisor Approval Required

To ensure that each student stays on track with degree requirements and progress toward graduation, it is a **strict** CL MS Program policy that all courses enrolled in that count toward the degree require the permission and signature of CL MS advising faculty (namely Sophia or Lotus) to be dropped or (as explained below) changed to Audit status, using the Course Change form (Add/Drop form). Policies on this vary across Brandeis graduate programs, but this is a strict policy of the CL MS Program. Even if your course's professor is unaware of our policy, it is your responsibility to follow the policy.

Waitlists for Full Courses

Students should proceed as normal in Workday with adding the course to their schedule and then registering for the course (see Job Aid on "Waitlist Management for Students"). Registering does not guarantee a spot in the class, but will allow the student to move up on the waitlist if other students drop. Students receive a message in the Workday inbox once they have been moved off of the waitlist and into a regular spot in the course.

Auditing Courses

Auditing involves attending a course, and thus being exposed to its content, but not receiving a grade for it, classically because no work or exams are completed. This is a very common thing for graduate students to do (both in our program and in general at American and Canadian universities), and can be an excellent way to gain some knowledge of an interesting area when there isn't sufficient room in the course schedule to enroll for credit and a grade.

Brandeis is a bit unusual in having both an 'informal audit' (which is the only kind that many universities have), where no record of the course appears on the student's transcript, and—only for graduate students—a 'formal audit', where the course appears on the transcript, but with a grade of 'AU' for 'audit', rather than a letter grade. Both informal and formal audits earn the student 0 credits toward graduation, but because the formal audit option allows the course to show up on a student's transcripts, it is the more popular route chosen by most graduate students in auditing courses here.

While, in some situations, a student may decide from the start of the term to audit a course, deciding to audit either formally or informally is also sometimes chosen when a student begins the term enrolled in a course, and later realizes that they won't be able to complete it for credit. In such situations, the student can either "drop to an audit"—changing their enrollment status to a formal audit—or drop the course from their record entirely, and then either informally audit, or stop all involvement with the course entirely. All such decisions require the permission of CL MS advising faculty, to ensure that dropping the course to an audit or altogether is the best decision for the specific situation.

Students interested in auditing a course should ask the instructor for permission to audit, letting them know whether it would be a formal or informal audit, and, if the instructor agrees, asking what requirements the instructor has for the student. This is most typically just attendance with the same regularity as an enrolled student, and actively listening or participating. In some courses, the instructor may not allow the student to hand in work (since this would take grading resources), while in other, more rare cases, the instructor might actually require that the student complete some or all of the course's work.

To formally audit a course, students should first register for the course in Workday, just as if you were taking the course for a grade. Then, to change their enrollment status from graded to audit, they submit a Course Change form (Add/Drop form) with the instructor's signature and the signature of the CL MS advising faculty (Sophia or Lotus). This is the same form used to add a course that doesn't count towards the CL MS degree, or drop a course, and the deadline to change status to a formal Audit is the same deadline for graduate students as the deadline to drop courses altogether (e.g. on a date in November, during Fall semesters). For more details, students can review the Workday Job Aid on "Auditing a Course for Grad Students".

To informally audit a course, nothing beyond asking the instructor's permission and finding out what requirements they would have of the student, if any. The course does not appear on the student's transcript, but they will often still benefit from having been exposed to some of the course material.

Degree Requirements

Please be aware that the University Bulletin is a legal document governing all academic regulations. If anything in this handbook contradicts the Bulletin, the Bulletin will take precedence. In addition, please be aware that in the event of a public health emergency or other major event, the procedures listed in this handbook may change.

The Department of Computer Science offers different MS programs, each with its own admissions criteria and degree requirements. Although you may be in courses with other CS graduate (and undergraduate) students, the following are only for the CL MS degree, and not for the other CS MS programs.

CL MS Degree Requirements

I. *Course Requirements*

The Two-Year CL MS degree requires 4 semesters of enrollment for full-time students, and full-time GSAS students must take a minimum of 3 courses per semester. Thus, a minimum of 12 courses are required for all Two-Year CL MS students, whether full-time or part-time.

Fifth Year B/MS[1] students must complete the same 12-course requirement to complete the CL MS, but will have taken some of these courses during their undergraduate studies. Since the MS year for B/MS students requires 2 semesters of enrollment for full-time students, this means that a minimum of 6 courses must be taken during this fifth MS year.

There are 4 basic types of courses (referred to below as Groups (A), (B), (C), and (D)) that will make up the 12 minimum courses taken by each CL MS student.

(A) Up to 6 Student-Specific Computer Science, Math, and Linguistics Background Courses

These are required of students who have not had an equivalent course prior to entering. Whether or not a given student must take each will be determined during the post-orientation group and individual advising meetings that precede the first day of classes for the first semester. Students entering with prior in-depth study of both computer science and generative/formal linguistics may not need any of these; at the other extreme, students entering with minimal prior study of computer science and math and no prior study of formal linguistics will often need to take all 6.[2]

LING 120b–Syntax I (offered every Fall)
LING 130a–Semantics I (offered every Spring)
LING 160b–Mathematical Methods for Computational Linguistics (offered every Fall)
COSI 10a–Introduction to Problem Solving in Python (offered every Fall & Spring)
COSI 12b–Advanced Programming Techniques (offered every Fall & Spring)
COSI 21a–Data Structures and the Fundamentals of Computing (offered every Fall & Spring)

COSI 10a, the most introductory CS foundation course, has a target undergraduate audience lacking any prior programming experience; the course does not count for the undergraduate major or minor in CS. First year CL MS students who have completed minimal prior CS coursework

[1] 'B/MS' is used throughout this Handbook to encompass both BA/MS and BS/MS students: i.e. students who completed a Brandeis undergraduate BA or BS, and are now in the 5th Year MS Program.
[2] Most courses taken in our Program are offered in just one but not both of the Fall and Spring terms. Courses for which this is true show the term in which they are offered in parentheses.

should take the COSI 10a/12b placement exam prior to the start of Fall classes. Whether or not the course will be required for each such student will be determined by a combination of the exam's results, the details of the student's prior programming work, and the judgment of the CL MS advising faculty.
Students for whom the course is not required might also opt to take it for programming foundations reinforcement, and/or to receive a systematic introduction to the Python language.

(B) 5 CL Core Courses – Required for all students[3]

COSI 114a–Fundamentals of Natural Language Processing I	(1st year Fall core course)
COSI 115b–Fundamentals of Natural Language Processing II	(1st year Spring core course)
COSI 230b–Natural Language Annotation for Machine Learning	(taken in first year, Spring)
COSI 231a–Advanced Machine Learning Methods for NLP	(2nd year Fall core course)
COSI 232b–Information Extraction	(2nd year Spring core course)

(C) 1 semester of any one of the three courses that satisfies the Exit Requirement – Required for all students

Required to satisfy the Program's Exit Requirement, and described in detail below, each student must complete at least one semester of one of these courses.

COSI 293b–Computational Linguistics Research Internship (offered every semester)
COSI 295a–Computational Linguistics Capstone Project (offered every semester)
COSI 299a–Computational Linguistics Master's Thesis (offered every semester)

With the approval of the CL Advising Faculty, Students may also opt to complete more than one such course—e.g. doing both Thesis and an Internship—and/or to complete any such courses over two semesters rather than one. In the latter situation, the two semesters must be the final two of the program (and so are typically in Fall and Spring of the second or fifth year).

(D) Up to 6 Required Elective Courses

The 5 CL Core Courses in (B) and 1 semester of an Exit Requirement Course in (C) serve as 6 of the 12 minimum courses required. This leaves 6 course slots remaining.

- If required to take all 6 of the Student-Specific Group A Background Courses, students will automatically reach the 12 course minimum just in fulfilling their requirements for Groups A, B, and C. For these students, no additional Elective Courses are *required*. These students can still opt to take additional Electives, bringing their total courses above the 12 minimum.

[3] CL core course numbers, and sometimes names, have changed over the past several years. In 2020, COSI 114a–Fundamentals of NLP I replaced the now-discontinued LING 131a–Introduction to NLP with Python. In 2022, the previously required COSI 138a-CL 2nd Year Seminar was discontinued. And, in 2023, course numbers but not course names or content were changed for COSI 115b (previously 114b), COSI 230b (previously 140b), and COSI 232b (previously 137b). At the same time, COSI 231a-Advanced Machine Learning Methods for NLP replaced the course name and number COSI 134a–Statistical Approaches to NLP, but the course retained its content.

- If required to take 5 or fewer Group A Student-Specific courses, students will complete their requirements from Groups A, B, and C *without* reaching the 12 course minimum. For such students, one or more Elective Courses are additionally required, so that the student reaches 12 total courses from across Groups A through D. Thus, for instance, if 5 Group A Background Courses are required, then the student has a requirement of just 1 Elective Course; if 2 Group A Background Courses are required, then 4 Electives are needed; and so on.

- Elective Courses that count toward the degree include:
    - any CL, straight CS, or LING course that does not meet any Group A or B requirement, with just the exception of a few undergraduate-only COSI courses such as COSI 45-Effective Communication for Computer Scientists;

    - a MATH course from the list of approved CL MS MATH electives (see below); or

    - with the prior approval of the CL MS advising faculty, a well-chosen other course that is a good match for student interests and goals. This could be a MATH course not on the approved electives list, a business course, or a course from another discipline. Students must obtain approval to count the course toward the CL MS degree before enrolling. Without this approval, the course will not count toward the 12 courses minimum needed to graduate.

II. Residency Requirement

For full-time students, 4 semesters of enrollment are required for the Two-Year CL MS, and 2 semesters for the Fifth Year CL MS. After the required number of terms of residency are completed, full-time students who need to enroll for one or more additional semesters (e.g. to complete remaining course requirements or the Exit Requirement) have an 'Extended Master's' enrollment status. This means that they are still allowed to enroll in courses just as an ordinary full-time student would, but pay substantially less in tuition fee amounts.

There is no residency requirement for part-time students. Instead, part-time students must complete the 12 courses minimum (along with all courses required for the degree) that corresponds to full-time students' minimum of 4 semesters of residency at 3 minimum courses per term.

III. The CL MS Exit Requirement

In order to complete the CL MS degree, students are required to complete at least one of the following, for at least one semester, by enrolling in the appropriate course(s) listed above: a Master's Thesis in CL, a CL Internship at a company, or a CL Capstone Project. As mentioned above, each course taken for the three varieties of Exit Requirement counts as a regular course toward full-time enrollment (thus carrying the full 4 credits that ordinary courses have), and toward the minimum 12 courses needed to complete the degree.

The Exit Requirement is standardly done in the final semester in the Program. With the permission of CL MS advising faculty, students can opt for an Exit Requirement Thesis, Internship, or Capstone Project to span two semesters rather than one, and/or to complete more than one of these. For more information on both of these, please see the 'Exit Requirement' section of this Handbook.

Academic Status in the Program & Academic Performance Reviews

Academic status in the CL MS program is assessed as follows. Note that these concern your status just at the level of the CL MS program. Note that your status as reported to GSAS is different, and is also noted here.

Good Standing: Courses have been taken as expected, no grade earned was below passing (i.e. below a B-, which is the lowest passing grade for all Brandeis GSAS students), and there is no more than one Incomplete or B- grade.

Cause for Concern: There is more than one B- grade in especially required courses, but no grades are below a B-. Any student who is in Cause for Concern status at the program level will be reported as on 'Advising Alert' to GSAS.

Delayed: Some courses were not taken as expected, and/or there is more than one Incomplete (EI or I), but the student is otherwise in good standing. Any student who is in Delayed status at the program level will be reported as on 'Advising Alert' to GSAS.

Probation: There is one or more failing grade (=grade below a B-) over the course of the degree. Any student who is in Probation status at the program level will be reported as on 'Advising Alert' to GSAS.

The Program conducts an academic performance review at the end of each semester.

- If a student receives more than one grade below a B- over the course of the degree, the program may recommend withdrawal during the academic performance review at the end of each semester.

- At the end of each semester, students are notified if their status is *other than* in Good Standing, and if so the reason for this status being assessed.

- At the end of the Fall semester, students who are in Good Standing—so that their coursework has been completed on schedule and with satisfactory grades, per the above criteria—are *not* notified.

- At the end of each academic year, all students in the program receive a notification of their academic standing (whether in Good Standing or otherwise), along with the reasons for this, and any specific comments or recommendations the program has for their successful academic and career development and graduation.

What to Do When Academic Difficulties or Academic Status Issues Arise

To avoid academic status issues and/or to overcome them if they do arise, students are **strongly** encouraged to be in touch with CL advising faculty, and with the course instructor, as early as possible—and to work with us and take our advice on how to proceed. Even if this is done later than might have been ideal, get in touch with a CL advisor right away when you realize that you're struggling. You are always welcome to do this, including in situations in which you're not sure the problem is large—e.g. when you're noticing that you're struggling a bit with content, are late handing work in, or encountering any other difficulties.

We generally do all we can to work with and offer support to students in these situations. There are many types of support we can offer that can do a great deal to help you navigate and overcome the situation. These can include advice for requesting extensions and working with your professors; putting you in contact with campus resources for health, accessibility, and other types of support; and setting you up with a CL PhD student tutor for added structure and/or content assistance, among many other things.

The university also makes several kinds of leave available to graduate students: a health leave of absence, a personal leave of absence, and pregnancy accommodation and parental relief. You can view the full policies, including the processes for initiating and returning from a leave, in the Bulletin or on the GSAS website.

Course Selection Information

Number of Courses Taken per Term

Full-time Two-Year students typically take roughly 4 courses per term in the first year, and roughly 3 courses per term in the second year. Fifth Year B/MS students are treated on a par with second year Two-Year students, and thus also take roughly 3 courses per term.

The minimum number of courses per term that a graduate student can take to retain their status as a full-time student is 3. While there is no maximum number per term for full-time graduate students, it is typically not possible for graduate students to take and do well in more than 5 courses in a single semester. Depending on the nature of the courses involved and also on the individual student, 4 or even 3 can sometimes be the limit of what can be comfortably tolerated and/or fully absorbed.

As elaborated further in the 'Guidelines and Process for Determining Each Semester's Course Schedule' below, the most important goal is to take enough courses to be challenged and learning as much as possible, while also making sure that the work is not so demanding that the student cannot maximally absorb and benefit from the courses they're in. It is important to keep this balance in focus as the central aim while shopping for classes, as the term proceeds, and at the deadline for graduate students to drop classes for the semester.

Since each course taken to satisfy the CL MS Exit Requirement counts as one course toward full-time enrollment, a student completing just a CL Internship, just a CL MS Thesis, or just a Capstone Project for the Exit Requirement during the final semester would only need to take 2 additional regular courses that term. A student choosing two Exit Requirement options—e.g. completing both a CL Internship and Thesis—during the final term could have a schedule that term of just those 2 Exit Requirement courses plus 1 regular course, which would be the final semester core course COSI 232.

Part-time students in the CL MS Program have the same degree requirements as full-time students, both in terms of the number and identity of courses taken overall. But part-time students take only 1 or 2 courses per term, and thus complete the degree over a longer period of time. The overall length of time to complete the degree part-time depends on how many courses the student takes each term, and whether or not the student opts to complete any courses during summer terms.

Sample Course Schedules

Though each student will work out their individual schedule with the CL MS advising faculty, the following templates can be useful to view for the two extremes in type of CL MS student: those who enter the Program without prior study of computer science (or math) beyond a small amount of programming experience, but with at least some study of linguistics—and those who come in lacking linguistics background, but with prior study of computer science.

Sample Course Schedule — Students with Linguistics but not CS background

*Note: Group (B) Core Courses and exit requirements obligatory for all students appear in **bold**.*

	Fall Semester	Spring Semester
1st Yr / Under-grad	• **COSI 114a Fundamentals of NLP I** • LING 160 Math Methods for CL (• COSI 10 Problem Solving with Python) • COSI 12 Advanced Programming Techniques (• LING and/or COSI background course, or CL Intermediate-Level Elective(s))	(• COSI 12 Adv. Programming Techniques) • COSI 21 Data Structures • **COSI 115b Fundamentals of NLP II** • **COSI 230 Natural Lang Annotation for ML** (• LING and/or COSI background course, or CL Intermediate-Level Elective(s))
2nd Year / 5th Year	(• COSI 21 Data Structures, if not taken during 1st year) • **COSI 231a Advanced ML Methods for NLP** • CL, COSI, or LING Elective(s)	• **COSI 137 Information Extraction** • **CL MS Exit Requirement Course** (• CL, COSI, or LING elective)

Sample Course Schedule — Students with CS but not Linguistics background

*Note: Group (B) Core Courses and exit requirements obligatory for all students appear in **bold**.*

	Fall Semester	Spring Semester
1st Yr / Under-grad	• LING 120 Syntax I • LING 160 Math Methods for CL (if no prior Linear Algebra) • **COSI 114a Fundamentals of NLP I** • 1-2 CL, COSI, or LING Elective(s)	• LING 130 Introduction to Formal Semantics • **COSI 115 Fundamentals of NLP II** • **COSI 230 Natural Lang Annotation for ML** • CL, COSI, or LING elective
2nd Year / 5th Year	• **COSI 231 Advanced ML Methods for NLP** • at least 2 CL, COSI, and/or LING Electives	• **COSI 232 Information Extraction** • **CL MS Exit Requirement Course** (• CL, COSI, or LING elective)

Elective Offerings

Elective courses include the following, grouped by domain and level of study.

CL intermediate-level electives include:
(appropriate for many/most 1st year students & all 2nd year students)
COSI 112a Modal, Temporal, and Spatial Logic for Language (Fall 2023; usually offered every other year)
COSI 132a Information Retrieval (offered every Spring)
COSI 135b Computational Semantics (next in Fall 2024; usually offered every other year)
LING 190b Topics in Linguistics: The Lexicon

CL advanced-level electives include:
(appropriate for all 2nd year students, & only those 1st years with significant programming background)
COSI 136a Automated Speech Recognition (next offering probably in 2024-25)
COSI 139a Machine Translation (next offering possibly in 2024-25)
COSI 216a Topics in NLP (Topics rotate; likely next offered in 2024-25)
COSI 217b NLP Systems (Topics rotate; likely next offered in 2023-24 or 2024-25)
COSI 233a Discourse and Dialog (likely next offered in 2023-24 or 2024-25)
LING 195a Intro to Research in Linguistics & Computational Linguistics (offered every Fall; typically a graduating-year course for CL MS students who choose it, though first years without significant NLP background can take the course if they have a linguistics background and want to do a straight linguistics topic)

Additional LING foundational and relevant elective courses include:
LING 105a Phonetics (Fall 2024; usually offered every other year)
LING 110a Phonology I (offered every Spring)
LING 115a Morphology (Spring 2025; usually offered every other year)
LING 121b Syntax II (Spring 2024; usually offered every other year)
LING 125b Linguistic Typology (offered every Spring)
LING 140a Architecture of Conversation: Discourse and Pragmatics (next possibly in Spring 2025; usually offered every other year)
LING 150a Historical Linguistics and Language Change (Spring 2024; usually offered every other year)
LING 173a Psycholinguistics (likely next offered in 2024-2025, and generally every other year)
LING 111a Phonology II (Fall 2023; usually offered every other year)
LING 190b Topics in Linguistics (topics rotate; offered periodically)
LING 197a Language Acquisition and Development (Spring 2025; usually offered every other year)

Additional COSI foundational courses include:
COSI 29a Discrete Structures (offered every Fall)
COSI 121b Structure and Interpretation of Computer Programs (offered every Spring)
COSI 130a Introduction to the Theory of Computation (offered every Spring)
COSI 131a Operating Systems (offered every Fall and Spring)

COSI electives especially relevant for CL include:
COSI 101a Fundamentals of Artificial Intelligence (Fall 2023)
COSI 111a Topics in Computational Cognitive Science
COSI 113b Artificial Life
COSI 118a Computer-Supported Cooperation
COSI 119a Autonomous Robotics
COSI 123a Statistical Machine Learning

COSI 125a Human-Computer Interaction
COSI 126a Introduction to Data Mining
COSI 127b Database Management Systems
COSI 129a Intro to Big Data Analysis
COSI 133a Graph Mining
COSI 143b Data Management for Data Science
COSI 153a Mobile Application Development
COSI 165a Software Entrepreneurship
COSI 166b Capstone Project for Software Engineering
COSI 180a Algorithms

Additional MATH electives for the CL MS program include:
MATH 8a Introduction to Probability and Statistics
MATH 10a Techniques of Calculus (a)
MATH 10b Techniques of Calculus (b)
MATH 15a Applied Linear Algebra
MATH 20a Multi-variable Calculus
MATH 22a Honors Linear Algebra and Multi-variable Calculus, Part I
MATH 22b Honors Linear Algebra and Multi-variable Calculus, Part II
MATH 31a Abstract Linear Algebra
MATH 35a Advanced Calculus and Fourier Analysis
MATH 36a Probability
MATH 36b Mathematical Statistics
MATH 37a Differential Equations
MATH 39a Introduction to Combinatorics
MATH 122a Numerical Methods and Big Data
MATH 124a Optimization

Notes about electives:

- Aside from COSI 132a–Information Retrieval (which is generally offered every Spring), CL elective courses tend to rotate each term and year, so that distinct courses are offered in each of the four terms of full-time students' enrollment. This is designed to allow students a variety of elective options over the course of their time in the Program.

- The additional courses COSI 216a–Topics in Natural Language Processing and COSI 217b–Natural Language Processing Systems are rotating-topic courses, and vary between intermediate-level and advanced-level material. These courses are often used to pilot new course topics before submitting them to be approved as regular courses. COSI 216a generally involves topics that are theoretical or modeling-based, while 217b typically involves more applied topics. (Within linguistics offerings, LING 190–Topics in Linguistics is also generally used to pilot new linguistics course topics, some of which are relevant to CL students.)

- Students are welcome (and in fact encouraged) to undertake internships, with or without academic credit for the internship, prior to the point at which they are academically ready to satisfy the Exit Requirement. This typically begins during the summer following the first year, and sometimes continues into the second year. For non-international students, such internships are typically done without getting academic credit. International students, in contrast, must get course credit in order to be involved in such an internship, and in these cases should enroll in the course COSI 293g–Master's Research Internship, which counts for one-fourth of a full course (i.e. for 1 total credit).

Such cases do *not* count as satisfying the Exit Requirement for the CL MS degree, as there is a distinct course taken (namely COSI 293b–Computational Linguistics Research Internship) for the Exit Requirement. Please see the Exit Requirement section below for more information.[4]

A Note Regarding Official Course Prerequisites for Electives

When considering a computer science, linguistics, or math elective course for which you may lack the official course prerequisites listed in the Bulletin and Schedule of Classes, it can sometimes still be possible to take the course. For COSI courses, this can especially be true after the first semester or two as a CL MS student (and sooner, for CL MS students who enter with a CS background). While not always the case, the official course prerequisites for elective courses are often adhered to more strictly for undergraduates than graduate students, and so it is always recommended to check with the course's instructor for advice and permission, if you suspect that you do have enough background to succeed in it. (Note that this is not the case for CL MS core courses, however; in these, the prerequisites are strictly enforced for undergraduate and graduate students alike.)

Guidelines and Process for Determining Each Semester's Course Schedule

'Shopping' for Courses & Adding Electives to Balance the Schedule

As mentioned above, the aim in selecting courses, for every semester in the Program, is for the student to be enrolled in enough content that they are feeling pushed and challenged, but not so much that they cannot fully benefit from and absorb the material.

★ Therefore, it is often ideal to begin the semester enrolled in at least one course that need not be completed, and could be dropped later on with the student remaining in Good Standing. In some semesters, this may even be two courses.

The reasoning for this includes the fact that, each semester, the drop deadline for graduate students is extremely late (e.g. not until November 14th for the Fall 2023 term), and, further, that there is no indication of having begun but subsequently withdrawn from a course for graduate students (so that there is no equivalent of a W on the transcript, as occurs for undergraduates at many other US universities).

In contrast, it is not possible to add a course once the semester is underway, if a student has not already been attending and doing work for it. Thus, it is possible to drop a course during the semester, if it or the overall course load has become too challenging—but not possible to add an additional course, if it has become clear that the course load is not challenging enough. And, particularly for a graduate student, it is extremely important not to fail a course.

It is for this reason that 'shopping' courses at the start of the semester is encouraged. In this way, students will generally begin the semester with a list of courses to attend from the first day, with it being clear which will definitely be taken (e.g. because they are required for all CL MS students, or for the particular student) and which are just being considered.

[4] Very importantly, as mentioned above and below, international students who enroll in an internship on or off campus may be required to obtain Curricular Practical Training (CPT) authorization from the International Students and Scholars Office (ISSO) BEFORE beginning the internship. International students interested in completing an internship, whether for their Exit Requirement or just for elective credit, must email isso@brandeis.edu to schedule an appointment (in-person or via phone) with their ISSO advisor to determine if such authorization is required. For more information regarding CPT, please visit their webpage:
https://www.brandeis.edu/isso/current/employment/curricular-practical-training.html.

This is even more the case for Two-Year, Full-Time students in their first semester of the Program, since, for them, it is often also still being worked out which Student-Specific Required Background Courses the student needs to take. Taking more or fewer Student-Specific Courses in a term will affect the number of electives also taken that term.

How New Students Choose Courses for the First Term – Group & Individual Advising

For new students in the Program, then, a major purpose of the group advising sessions held in the afternoon and morning right after Orientation, as well as of the individual advising meetings that occur after Orientation and before the first day of classes, is for the student to emerge from all of these with a list of courses to attend from the first day—with it being clear which will definitely be taken, which are just being shopped, and so on. Part of this should involve a prioritizing of the course list, so that it is also clear what would be the first or second course to drop once the semester is underway, if things become too challenging.

Navigating Workday Enrollments During the Course Shopping Period

Please enroll in all courses that you would like to take and shop; if a time conflict prevents you from adding any course in Workday, please email the instructor to let them know that you plan to shop their course, so that they can plan accurately for the likely number of students.

After the first week or so of the semester, and after checking back in with CL MS advising faculty if needed, students will generally have settled on a final list of classes that they will take, and for which they will (at least) begin the semester doing work. In the first semester in the Program, for both Two-Year and Fifth Year students, it is often not until this point that students finalize their official course schedule in their online Workday account.

Course Registration beyond the First Term in the Program

After the first semester in the Program, students will have registered for some initial list of courses during the pre-registration period for that term that occurred within the preceding semester. For these students, it is at this point that courses may be added to or dropped from that list of enrolled courses in Workday. All Workday changes that involve adding a course must be completed before the end of the regular registration period for the term (e.g., for Fall 2023, by September 14th).

Later in the Term, for All Students – Deciding What to Drop & What to Keep

As each course proceeds, and especially as its introductory phases are completed and midterm work approaches, it often becomes clear that certain courses not absolutely required for the particular semester might ideally be dropped, to allow for the rest of the semester to proceed for the student in the best way possible. The typical reasons for a student deciding to drop a course at this point are either because they are in danger of getting a non-passing grade below a B-, or (more often) that what would be required to get a passing grade would take so much additional work that it would not allow the student to engage or learn as fully from their remaining courses, and especially their core and required background courses that term.

Students should keep this in mind, feeling free to consult with CL MS advising faculty as needed, and keeping aware of the absolute deadline that term for graduate students to drop courses (e.g. November 14th, for semester courses in the Fall 2023 term).

The Exit Requirement: A Thesis, Internship, or Capstone Project

Key Deadline Information for 2nd/5th Year Students to Note at the Start of the Year

As mentioned above, the **Key Degree Dates for Graduate Students** page on the Registrar's Office website is separate from the general Brandeis Academic Calendar, and includes specific graduation deadlines (including those for Master's theses) just for graduate students. Thus, you should find this page and keep its dates handy as your final year begins, and as it progresses. From the Academic Calendar at the Registrar's Office main webpage, the dates can be accessed each year from the link to 'Additional Deadlines for Graduate Students 2023-2024' (with the year varying as appropriate).

The Exit Requirement: An Overview

The Exit Requirement, in a Nutshell

As the final requirement towards graduation, students are required to:

1. Choose at least one of a CL Thesis, Internship, or Capstone Project.

2. Enroll in and complete with a passing grade at least one semester of at least one option. Each option involves a full 4-credit course that counts towards the 3 courses minimum needed for full-time enrollment:

   COSI 293B–Computational Linguistics Research Internship
   COSI 295A–Computational Linguistics Capstone Project
   COSI 299A–Computational Linguistics Master's Thesis

   Note that the Master's Thesis option requires substantial strength in computer programming, CL/NLP, research, and overall academic skills and independence by the student, and so may not be approved for students who are not in Good Standing academically, whose programming skills are not strong enough (as demonstrated in e.g. CS background courses and/or CL courses), and/or are not strong enough at working independently to be able to consistently produce work that is complete and high-quality without significant additional assistance. Such students will need to instead choose a Capstone Project or Internship, so that they can benefit from the additional external structure provided with these non-thesis options. We have found that this will allow students in this situation to have a better overall learning experience, with better academic and career outcomes.

3. Complete the Exit Requirement course(s) in the final semester(s) of the degree (so normally in Spring of the second year for full-time Two-Year students, or Spring of the fifth year for B/MS students). This allows the Exit Requirement to serve as the culmination of study in the Program, with students using the knowledge and skills acquired throughout their studies in satisfying it.

   - **Note:** this means that while internships completed e.g. during the summer between the first and second year are wonderful opportunities for learning and career growth, they cannot be used to satisfy the Exit Requirement.

     Consistent with this, the course taken for (e.g. international) students who need course credit for a summer internship is NOT the 4-credit Exit Requirement course COSI

293**B**-CL Research Internship, but instead the quarter-course, 1-credit general COSI course COSI 293**G**–Master's Research Internship.

Finding Exit Requirement Course Listings in the Schedule of Classes

All three of the Exit Requirement courses are 'independent instruction' courses, and so only show up when searching the COSI Schedule of Classes page for a particular term by checking the 'Include Independent Instructional Classes' box at the top of the page, and making sure that 'Graduate' or 'All' (and not 'Undergraduate') are selected from the menus at the top of the page. (See the note on this in the Schedule of Classes information above, under Important Brandeis Offices and Websites.)

Opting for More Rigor in the Exit Requirement with Advising Faculty Permission

With the permission of the CL MS advising faculty and (for Theses and Capstone Projects) of the project's supervisor, students can choose to complete more than one of the three Exit Requirement options, and/or for either or both to occur over two semesters, rather than one. This would still be done at the end of the degree, and thus generally in Fall and Spring of the second year (for Two-Year students) or fifth year (for B/MS students). This is most commonly done either in situations in which a student secures an Exit Requirement-qualifying internship that they will work at throughout their final two semesters in the program, or for students wishing to undertake a Thesis or Capstone Project of greater scope and/or depth than can be completed in a single term.

Internship, Thesis, and Capstone Topics – What Topics & Workloads Qualify?

CL/NLP is a diverse subject area, and there are many suitable project topics for Theses and Capstones, and many different types of industry jobs that can qualify for an Exit Requirement Internship. However, because the Exit Requirement marks the culmination of your studies in the CL program, all three Exit Requirement Options must involve work that involves BOTH computation and language in major ways.

Within this, the project topic or type of internship position can be very applied, very theoretical, or anywhere between the two. But, for instance, the work cannot involve solely CS/software engineering content, and also cannot involve solely linguistics or language annotation content. Such straight CS and straight linguistics or language topics can be acceptable for many regular courses that serve as electives, but not for the Exit Requirement.

Internship positions typically need to involve approximately 15 hours per week minimum, and are an average of roughly 20-25 hours per week. This is generally imposed by the companies themselves, who often require at least 15-20 hours per week for it to be worth their time to train and employ you. It is ideal, if possible, not to exceed 25 hours per week at an Internship, and we strongly recommend not exceeding 30 hours per week, if at all possible. For international students, it is also crucial (as usual) to be in touch with your ISSO advisor about CPT limitations on the number of hours per week you can work; please see the important note for international students below.

Completing a Computational Linguistics Internship

Students opting to complete an Internship for their Exit Requirement must enroll in the course COSI 293b–Computational Linguistics Research Internship. This involves registering for an individual section taught by one of the CL faculty. You should choose the section taught by whichever faculty member helped facilitate things or put you in touch with the company at which you will do the internship, if there is one, and, if not, with the designated faculty member announced at the start of each semester. (For

instance, this faculty member is Sophia, for the Fall 2023 term.) Check with Amy Smack or CL MS advising faculty if you're unsure of who to register with.

This faculty member will keep in contact with the student's supervisor at the company, and will determine and enter a grade for the student's performance in the Internship course accordingly. If there is no section of the course listed for the term in which you are completing it with the particular professor you'll use, contact the office (lingcl@brandeis.edu or compsci@brandeis.edu) to have an additional section added with that professor.

As noted above, the amount of time spent each week varies by company for a particular Internship, but is usually at least 15 hours per week in order for the company to feel it worth their while to train the intern, and typically somewhere between 15-20 hours per week.

The Internship is considered finished—and thus the Exit Requirement satisfied—when, at the end of the term, the Brandeis instructor supervising the Internship receives feedback from the supervisor at the company that the work was completed in a way that corresponds to the standard Brandeis passing grades for graduate students (i.e. of B- or better). The Brandeis instructor will keep in touch throughout the term with the supervisor at the company, so that the student will have a sense as the term proceeds that the work being done is indeed satisfactory.

Reminder that Internships Completed Earlier Cannot Satisfy the Exit Requirement

Students are welcome and encouraged to undertake internships (with or without academic credit for the internship) prior to the point at which they are academically ready to satisfy the Exit Requirement. For international students who must get course credit in order to be involved in such an internship, the course COSI 293g–Master's Research Internship is typically used in this case. However, such cases would *not* count as satisfying the Exit Requirement for the degree (and, accordingly, students would not in these cases enroll in COSI 293b–Computational Linguistics Research Internship, which is used just to fulfill the Exit Requirement).

EXTREMELY Important Note for International Students Completing an Internship
As mentioned above, international students who enroll in an internship on or off campus may be required to obtain Curricular Practical Training (CPT) authorization from the International Students and Scholars Office (ISSO) BEFORE beginning the internship. International students interested in completing an internship, whether for their Exit Requirement or just for elective credit, must email isso@brandeis.edu to schedule an appointment (in-person or via phone) with their ISSO advisor to determine if such authorization is required. For more information regarding CPT, please visit:
https://www.brandeis.edu/isso/current/employment/curricular-practical-training.html.

Completing a Computational Linguistics Master's Thesis

Initial Considerations in Deciding to Undertake a Thesis

Completing a Thesis is an intensive and rigorous process that can be extremely satisfying and rewarding, and that can, if the student chooses, begin or continue their path toward additional research at the doctoral level and beyond. In order for the experience to go well, and truly advance the student's growth and development, it is important to give careful thought to the decision of undertaking a Thesis as the (or an) Exit Requirement choice.

Very importantly, Thesis work is pushed forward not by the guidance of the supervisor, but primarily by the student. Thus, it should only be undertaken by students who wish to, and are academically prepared to, take on an academic research project requiring this level of self-directedness.

Before deciding to choose the Thesis option, students should carefully read through all that is involved, as laid out below. It is also very helpful to look through prior CL Master's Theses that have been completed by students in our program in prior years, by visiting the Brandeis Library's Institutional Repository and searching for Theses from our program.

As noted above, students who are not in Good Standing academically, who have struggled in relevant courses, and/or who are not quite yet in possession of the substantial programming, CL/NLP, research, and overall academic skills and independence required for a Thesis may not be approved to enroll in the Thesis course. Consult CL advising faculty if you have questions.

First Steps to Take toward Deciding to Undertake a Thesis

To complete a Thesis, students must enroll in the 'independent instruction' course COSI 299–Computational Linguistics Master's Thesis. This involves (analogously to the Exit Requirement Internship course COSI 293b) registering for an individual section taught by one of the CL faculty—in this case, whatever faculty member is supervising the Thesis.

Students interested in completing a Thesis should be in touch with the faculty member with whom they would like to work, ideally during the term before the Thesis will be done—and, at the very latest, by the start of term in which the Thesis will be done. For two-semester Theses that will be carried out over the Fall and Spring terms, it is ideal to begin speaking with the potential thesis supervisor toward the end of the preceding spring term, or during the summer.

In order to register for the course, the student will need to have worked out a topic (or at least a domain of study) which the supervisor has agreed to. This means specifically (and minimally) that the supervisor has a sense that the topic is suitable and will be fruitful as a research topic, that the student will be able to complete it in the time required, and that the professor has enough time to serve as supervisor.

Because it is common for students to go through a few potential topics before coming to one that both they and the supervisor agree to, students are strongly encouraged to begin discussing possible topics with potential supervisors as early as possible. (It is good to discuss a potential topic, for instance, at the start or during the course of the semester *before* the one in which the Thesis will actually be done. There can even be several discussions about the project before the start of the Thesis' first semester.)

For the project to begin, the Thesis supervisor and CL MS advising faculty must also agree that the student's overall performance in the Program has been sufficiently strong to enable them to carry out Thesis work successfully. Where this is not the case, for students who have struggled academically or are in other than Good Standing, we may require that the Exit Requirement be satisfied instead via an Internship or Capstone Project, given that the latter two will serve the student better in their learning and growth, as they prepare to finish the Program and work out a good post-graduation placement.

GSAS Thesis Style, Formatting, & Submission Guidelines (IMPORTANT!)

For full information on GSAS' rules and guidelines on Master's (and PhD) Thesis writing, formatting, content, and completion, visit the GSAS Thesis and Dissertation Guide as early as possible after choosing the Thesis option. You will save yourself a lot of time (and headaches!) if you read the style guidelines carefully and set yourself up to follow them BEFORE you begin writing even your first draft.

Overview of the Thesis Process & the Thesis Itself

The Thesis process typically involves regular (usually weekly or every-other-week) meetings with the Thesis supervisor, and numerous drafts of the Thesis before the final version is ready to submit. As a rough guideline, typical CL MS theses are roughly 40-60 pages, including the bibliography and any appendices. The content should be worked out in close collaboration with the Thesis supervisor, but typically includes:

- An abstract
- An introduction that defines the problem, laying out why it is interesting and hard, reviewing prior related literature, outlining possible strategies for solving the problem, and describing the approach proposed
- A chapter detailing the author's approach, including an introduction of the proposed analysis' components and the experimental/corpus design
- A chapter specifically on the corpus design and experiments
- A chapter discussing the results and consequences
- A bibliography, and, if appropriate, one or more appendices.

The Thesis Defense & Completion

The Thesis Defense is the final oral examination that the student must pass in order for the Thesis to be complete and a grade assigned to the Thesis course. Only once the Thesis has been successfully defended, and any formally required revisions have been made (see below for more on this), can the Thesis be considered complete. At this point, the final administrative steps to complete involve the student electronically depositing their thesis to ProQuest ETD; the supervisor entering a grade for the Thesis course; and the supervisor, defense committee members, and CL MS Chair or Director of Graduate Studies signing the Certification of Master's Thesis Acceptance form. It is only once these have all occurred that the student has officially completed the Exit Requirement via a Thesis.

Reaching this point involves several steps, beginning with the student and supervisor feeling that the Thesis is in a sufficiently finished state to proceed to a defense. This ‘defense draft’ should generally be sent to all defense committee members at least one week before the defense itself, during which time the committee members will read the draft and prepare their defense questions.

Importantly, the Thesis supervisor must approve a Thesis draft as ready to be defended before the student is allowed to forward it to the defense committee members to read. In our program (as is typical at most American and Canadian graduate programs), it is assumed that the Thesis supervisor will not approve a Thesis proceeding to a defense and being forwarded to the defense committee members until they feel it to be of high enough quality to pass the defense.

At this point, **it is the student’s responsibility to schedule the defense** by communicating with their supervisor and defense committee (also referred to as other thesis readers) to decide on a defense date. It is important to plan this well in advance, since faculty schedules are often very busy. **At least one week before the defense date**, the student should also email Amy Smack in the Division of Science Graduate Affairs Office their Thesis title, abstract, defense date and time, and committee member names.

The Thesis defense itself is structured like typical Master's Thesis defenses at other American and Canadian universities. When the Thesis is close to being finished, the supervisor and other CL faculty will determine a defense committee, consisting of the supervisor plus one or more other faculty members (typically 1-2) with knowledge of one or more major domains within the Thesis' topic.

As also common in many other American graduate programs, Thesis defenses in our program are 'open', meaning that other students, faculty, and community members are invited to attend. The defense is a valuable educational experience for all community members, and an excellent opportunity to hear about the research of a graduating student who has engaged with the program's content over the course of the entire degree. Attending thesis defenses throughout your time in the program is an excellent way to be as familiar and prepared as possible for what a defense is like when reaching their own MS Thesis defense, and/or if they continue their studies at the PhD level, where defenses are typically roughly analogous in structure.

The defense begins with the student giving a short presentation (roughly 30 minutes) of the Thesis content. After this, each committee member poses questions about the Thesis to which the student responds as thoughtfully as they can. Once all committee members have finished their questions, the committee convenes privately to determine whether or not the thesis has passed, and, if so, whether this is conditional on any additional revisions. The candidate is then invited back and given the committee's decision.

In many cases, Theses pass with no formally required revisions. When this occurs, the candidate is welcome but not required to make additional changes to the Thesis draft before depositing it in final form to ProQuest ETD. In this case, if any changes are made, there is generally no further formal approval required by the Thesis supervisor or committee members before the final draft can be uploaded.

In some situations, however, the committee may formally require that specific revisions be made to the Thesis in order for it to pass. When this occurs, the revised post-defense Thesis draft generally must be submitted to the supervisor for certification that the necessary revisions have been made. Only once the supervisor has approved the final revised form can the final administrative steps occur—namely with the candidate depositing the final draft to ProQuest ETD, the supervisor entering a grade for the Thesis course, and the supervisor and program Chair or DGS signing the Certification of Master's Thesis Acceptance form.

Submission Deadlines: How to Meet Them & What to Do if More Time Is Needed

- ★ **<u>Very Important note</u>:** the Registrar's Office and GSAS set deadlines for each degree date by which the FINAL version of a Thesis must be approved and deposited to ProQuest ETD. This deadline has become much earlier than is ideal—namely, within the last few weeks of the term in which the student plans to graduate, and well before the last day of classes that term. For instance, MS theses for students who wished to graduate in Spring the last few years had to be completed, including having passed the defense and finishing any required revisions, by several weeks *before* the last day of classes for the Spring semester.

  We have been able to successfully negotiate extended due dates just for our program with GSAS in recent years, allowing our Thesis students to finish their defense draft toward the end of classes, and defend during finals week. While it is not a guarantee that we will be able to achieve this again in the year in which you graduate, it is likely. Students considering undertaking a Thesis should check with CL MS advising faculty or Amy Smack during the start of their

second/fifth year to see whether later submission deadlines just for our program will be possible that year.

Some helpful information for the very end stages of Thesis completion, leading up to the defense

- After learning of that school year's Master's Thesis deadline dates for our program, the student should work at the start of their second year (or their Thesis term, for one-semester Theses) to plan Thesis progress carefully, working backwards from the university's date for the Thesis to be accepted and uploaded, to ensure that the Thesis can be finished in time for the appropriate graduation dates.

- If this is not achieved, then the student's graduation date will need to be delayed. For instance, if the May graduation deadlines are not reached, then the student would not be able to officially graduate until August—though all degree requirements could be finished before that, and we would be able to produce a letter certifying this, if needed for an employer or additional graduate program. It is in fact common for Thesis students to graduate in the Summer rather than Spring term, and this can be another consideration for students who choose to undertake a Thesis.

- Students who have started their thesis in the Spring (or Fall) and end up completing it in the Summer will be enrolled for the Summer Term course CONT 200a by the Registrar's Office, which constitutes full-time enrollment for that term. The student will receive an "EI" (excused incomplete) grade for their COSI 299 Thesis course until they complete the Thesis and defense, and their supervisor submits a final grade, at which point the EI is replaced with that final letter grade. A student completing an EI in one or more courses needed to complete graduation requirements (whether involving a Thesis or not) will have a credit applied to their student account, so that they do **not** have to pay tuition for the summer.

- All Thesis writers should keep in close contact with CL MS advising faculty about their estimated completion date, as the end of the term approaches, so that the advising faculty can assist with the process as needed. Students completing a thesis in the summer should be in touch with their supervisor early on in the summer about scheduling a defense date, and aim by **no later than the end of June** to have set the date. Because faculty often go on vacation during the summer, coordinating a defense date can take some time, which is greatly aided by doing this work as summer begins.

- Despite the fact that e.g. Internships for the Exit Requirement are generally completed straightforwardly in the one semester minimum required, students interested in completing a Thesis for their Exit Requirement are advised to seriously consider completing it in two semesters, to allow enough time for process to take place by the graduation deadlines. Students who opt for one-semester Theses will still benefit from beginning discussions with a potential supervisor about the Thesis topic and content, and beginning background reading and thinking, during the term prior to the one in which the Thesis is officially undertaken.

  To facilitate working on the Thesis' material over two semesters, we strongly encourage Thesis students to follow one of two scenarios.

  – For students who have identified a topic and supervisor before the start of their second year, and who have sufficient knowledge of research methodology to begin the Thesis work in earnest in the Fall, we encourage enrolling for both Fall and Spring term in the COSI 299 Thesis course.

- For students who need the Fall term to develop their Thesis topic, and/or who are newer to independent research would benefit from a structured, hands-on introduction to the research process, we recommend taking LING 195b–Introduction to Research in Linguistics and CL in the Fall, and then the Thesis course COSI 299 in the Spring. LING 195b helps students develop a topic and carry out initial work on it, with structured assignments that guide the student through finding a good topic, building up background knowledge of it by identifying and reading relevant literature, designing and, if appropriate, carrying out pilot work on one or more experiments, and progressively completing an initial piece of writing for the project over the second half of the course.

Completing a Capstone Project

The Capstone Project is a third option for satisfying the Exit Requirement, and involves completing the full 4-credit course COSI 295a–Computational Linguistics Capstone Project.

Roughly, the Project will involve the student regularly meeting with the faculty member who serves as the Project's supervisor, potentially as a part of the faculty member's lab meetings, or in groups with other Capstone students. The student then develops a significantly sized CL project whose topic aligns with the faculty member's research interests, and which is of the student's own design. Often, but not always, the topic may also align with the specific work being done in the faculty member's lab.

Capstone Projects have a substantial scale and workload, equivalent to that of work done for an Exit Requirement Internship or Thesis. Project topics are typically applied rather than theoretical, in nature, but this is not a strict requirement. Work done for a Capstone Project can then be added to a student's portfolio, and can be particularly helpful in applying for CL positions in industry.

For each student's Project, and as appropriate to the topic and student situation, the supervisor will determine whether the regular meetings will be conducted individually, with other students also completing Capstone Projects, or simply as part of the faculty member's regular lab meetings. In all cases, these meetings provide an environment in which the student can share ideas and receive feedback on their work as they progress.

A major difference between the processes involved in completing a Master's Thesis versus a Capstone Project involves the work done at the project's end. Capstone Projects do not require a formal Thesis defense, and are also not generally written up in the specific style of an academic Thesis.

Instead, upon completion of a Capstone Project, the student is required to give a public presentation and/or demonstration of the Project, and to submit a write-up on the project to the supervisor. The specific content required for both the presentation and write-up are determined by the Project's supervisor, and tailored to the nature of each individual Project. Students completing Projects should thus be in close touch with their supervisor about exactly what is required for both as the end of the semester approaches.

Like Master's Thesis defenses, Capstone Project presentations are open to all in the community. They begin with a presentation by the student for roughly 10-20 minutes, with the exact amount to be set by the CL faculty as the date approaches (and often dependent in part on how many other presentations are being given during the session). The presentation is followed by a short period in which audience members can ask questions of the student, and for any general discussion.

The Capstone Project is considered finished—and the Exit Requirement satisfied—once the student has successfully completed both the Project's write-up and presentation, at which point the supervisor enters a grade for the Capstone Project course. The final evaluation is performed by the supervisor alone.