EMORY | LANEY GRADUATE SCHOOL

Computer Science Master of Science Program Handbook

(Updated April 2026)

1 Handbook Overview 2

2 Program Overview 2

3 Computer Science MS Program 2
3.1 Course Requirements 3
3.1.1 Three (3) Core Subject Areas (1 from each of the following area) 3
3.1.2 Four (4) Elective Courses 3
3.2 MS CS Options 3
3.2.1 MS CS By Coursework: Three (3) Additional Courses 3
3.2.2 MS CS By Project: A Master's Level Project and One (1) Additional Course 3
3.2.3 MS CS By Thesis: A Master's Level Thesis 4
3.3 Computer Science Master's Practicum 4
3.4 Graduation Requirements 4

4 Annual Evaluation 4
4.1 Maintaining Satisfactory Progress 5
4.2 Probation and Dismissal Policies 5
4.2.1 Probation 5
4.2.2 Recommendation of Dismissal 5
4.2.3 Dismissal Appeals 6

5 Other Policies and Services 6
5.1 Grievance Policy 6
5.2 Parental Arrangement Policy 6
5.3 Department of Accessibility Services (DAS) 6
5.4 Student Support Services 7
5.5 English Language Support Program 7
5.6 EEO Employer-Disability/Veteran Statement 7
5.7 University Policies 7

6 Appendix A: MS CS Course Listing 8

1 Handbook Overview

The Computer Science Master of Science (CS MS) Program Handbook (handbook) outlines the policies of the CS MS Program at Emory University. Policies pertaining to the Computer Science and Informatics (CSI) PhD Program, which is administered separately, can be found in the companion CSI PhD handbook.[1] The CS MS handbook complements the Laney Graduate School (LGS) Handbook, which contains general degree requirements and graduate school policies. In general, students should consult the latest version of the handbook. Should the CS MS handbook change with regards to course or graduation requirements, students can opt to satisfy the requirements of the version that prevailed upon their matriculation or the current version. If unsure about a policy or rule, students should consult the graduate program coordinator (GPC) or the Director of Graduate Studies (DGS).

2 Program Overview

The James T. Laney School of Graduate Studies is committed to graduate education that provides students with deep and broad expertise in their chosen fields, creativity to cross discipline boundaries, courage to challenge convention, and confidence to ask unexpected questions and articulate bold new perspectives.

The CS MS program is offered and administered by the Department of Computer Science (CS). It is primarily intended as a terminal Master's and a majority of its graduates pursue employment upon graduation. A few students continue on to PhD programs at Emory or elsewhere. The CS MS conducts its own admissions process, but almost all courses for the CS MS degree are also approved for the Emory CSI PhD program, and vice-versa. For students who enter the CS MS program through the CS 4+1 program, this handbook is relevant only upon graduation from Emory College.

As such, the CS MS program is closely associated with the CSI PhD, which is jointly offered and administered by the Departments of CS, Biomedical Informatics (BMI), and Biostatistics and Bioinformatics (BIOS). CSI PhD students can receive an MS in CS by candidacy, or as an exit ramp. Terminal MS students only have the option to choose the CS MS track.[2] The set of program administrators include:

- Director of Graduate Studies (DGS);
- Graduate Program Coordinator (GPC) or Program Administrator (PA);
- MS CS Committee comprising the MS CS DGS, and two additional faculty members.

3 Computer Science MS Program

The CS MS program is designed around departmental strengths in data and information management, data mining, healthcare analytics, machine learning, natural language processing, security and privacy, and information access and retrieval. The program prepares students for professional jobs in computer industry or further graduate study. Students can choose one of the following options:

- *Course-Only Option*: 10 graduate courses that will count towards the CS MS Degree
- *Project Option*: 8 graduate courses that will count towards the CS MS Degree plus 6 research credits Students conduct a major implementation or analytic project, conducted independently, accompanied by a substantial project report and code and data as appropriate. Satisfactory completion of the project requires approval by the faculty advisor.
- *Thesis Option*: 7 graduate courses that will count towards the CS MS Degree plus 9 research credits A thesis involving substantial, novel, independent research and contributions of quality publishable in

[1] CSI and Math PhD students can obtain an MS CS via candidacy as outlined in the CSI or Math PhD handbook.
[2] The BMI track is only available to CSI PhD students or if you entered the CS MS program prior to Fall 2025.

a refereed workshop, conference, or journal,[3] to be submitted to LGS.

The option only needs to be declared during the term when the student intends to graduate. Additionally, each student must complete an internship as a part of the degree practicum requirement. The internship can be done at Emory or externally (including internationally) and can be paid or unpaid. Students are expected to find their own internships, but the program can help as necessary.

3.1 Course Requirements

Students must take a course from each of the three core subject areas and *at least* four elective courses. The specific sets of required and elective courses depend upon a student's choosing.

3.1.1 Three (3) Core Subject Areas (1 from each of the following area)

1. Algorithm Subject Area: CS 526 Algorithms OR CS 523 Data Structures and Algorithms;
2. Intelligent System Subject Area: CS 534 Machine Learning OR CS 557 Artificial Intelligence OR CS 570 Data Mining;
3. Computer Systems Subject Area: CS 551 Systems Programming OR CS 554 Database Systems OR CS 580 Operating Systems.

3.1.2 Four (4) Elective Courses

Totaling twelve or more (12+) credit hours in CS, BMI, BIOS, BMED or MATH. Common Electives are listed in Appendix A: CS Course Listing. With prior CS MS DGS approval, other courses can be used to satisfy this requirement. *The course list will be updated as course offerings evolve.*

3.2 MS CS Options

In addition to the 7 courses (3 Core and 4 Elective) described above, MS CS students must choose one of the following three options:

3.2.1 MS CS By Coursework: Three (3) Additional Courses

1. Any three approved additional courses from the list in the Appendix, or other appropriate courses approved by the DGS.

3.2.2 MS CS By Project: A Master's Level Project and One (1) Additional Course

1. CS MS Project (6+ credit hours): Currently offered under either the CS 597R, CS598R, or CS 599R rubric, this course involves a substantial software development effort under the supervision of a faculty advisor resulting in a tangible artifact appropriate to Master's level contributions. This can be conducted over one or more semesters with different faculty but must comprise one major comprehensive project.
2. One approved additional course from the list in Appendix A, or other appropriate courses approved by the DGS.

[3] While the student's thesis must be publication quality, it does not need to be a published or submitted work.

3.2.3 MS CS By Thesis: A Master's Level Thesis

1. CS 599R Thesis (9 credit hours): A substantial research project at least equivalent to PhD proposal-level work, comprising original research of publishable quality, manifested in a substantial thesis. This can be conducted over one or more semesters but must comprise one major research effort. Students must be enrolled in CS 599R for at least 1 credit hour during the semester in which they defend their thesis.
2. Thesis Defense Details
    - Thesis Committee: The thesis advisor must be a member of the LGS faculty and serves as the chair of the thesis committee. The committee must include at least three (3) LGS faculty members, with at least two (2) from the CS faculty. The student, in consultation with their thesis advisor, selects the remaining committee members.
    - Oral component: The oral defense must be scheduled at least one (1) week before the applicable LGS degree completion deadline, to allow adequate time for any required revisions. The defense consists of approximately 30–45 minutes of presentation by the student, followed by questions from the committee.
    - Written component: A complete draft of the thesis must be provided to all committee members at least one (1) week prior to the oral defense, to ensure the committee has sufficient time to review the work. The thesis must be formatted according to LGS standards. Students are strongly encouraged to review the LGS calendar each semester for applicable deadlines. Failure to meet LGS deadlines may result in a delay of graduation.

3.3 Computer Science Master's Practicum

Each student must complete a practicum experience as a degree requirement, tracked as a program milestone in Degree Tracker. This requirement aims to expose Master's students to real life problems that CS professionals face in their working environment, and to help students to acquire crucial skills and experience in applying their CS skills in solving practical problems.

Students perform a project under the direction of an Emory faculty member or supervised by a CS expert in the industry. In both cases, the project to be undertaken should be described by the student and submitted for approval by the GPC and DGS. The amount of work for the practicum varies from full-time (i.e., in case of an external internship) to part-time of at least 10 hours per week (i.e., in the case of an internal internship).

3.4 Graduation Requirements

All MS coursework must be completed with a grade of C or higher and an overall GPA of 3.0 or higher, based on the core, elective, and additional coursework only. The additional coursework refers to the additional 3 courses in the MS CS by coursework or the additional 1 course in the MS CS by Project. CS 597R, CS598R, and CS 599R, are not included in the cumulative GPA computation. If the same course is re-taken, the highest grade will be used in the GPA calculation. If a course is not used towards the 10 (coursework option), 8 (project option), or 7 (thesis option), the grade will be excluded from the 3.0 GPA requirement.

For MS students matriculating through the CS 4+1 program, only 2 of the graduate courses can be double-counted toward the BA/BS degree. In other words, the remaining coursework (5-8 courses depending on the MS option) cannot be used to fulfil the BA/BS degree requirements.

4 Annual Evaluation

The LGS and each program have standards for academic performance that students must meet, including making satisfactory progress through the program. CS MS students will be reviewed by the DGS and GPC/PA at

the end of each semester to ensure they are making satisfactory progress. The evaluation is primarily based on an assessment of the student's overall performance including coursework, exams, and project/thesis performance. In the case of unsatisfactory progress, students will be notified shortly after the completion of the semester.

4.1 Maintaining Satisfactory Progress

CS MS students must maintain satisfactory academic progress throughout their time in the program. Satisfactory academic progress for each term in our program is defined as meeting all of the following criteria:

- The student has a GPA ≥ 2.7 in each term across all their courses (this includes CS 597R, CS 599R, and any coursework that will not count towards the CS MS degree).
- The student does not receive an F (Failing), a U (Unsatisfactory), an IF (Incomplete Failing), or an IU (Incomplete Unsatisfactory) grade in any course.
- The student has less than 2 courses and 9 units of unresolved I (Incomplete) grades on their entire academic record.
- If the student has successfully completed 5 or more graduate courses towards their CS MS degree (i.e., a grade of C or higher), they have a cumulative GPA (as computed in Section 3.4) ≥ 3.0 in these courses.

4.2 Probation and Dismissal Policies

CS MS students who are not making satisfactory progress risk being placed on academic probation. Two continuous terms of academic probation will trigger a recommendation of dismissal from the program.

We understand that life circumstances can make it difficult for someone to achieve their goals and potential. We want all our students to be successful. We encourage any student feeling overwhelmed or facing challenges to reach out to the DGS or GPC/PA, the Assistant Dean of Student Affairs in LGS, and/or Student Health Services for support. Please do not hesitate to ask the DGS or GPC/PA for help, and please see the Support section of the handbook (CS MS and LGS) for more information about the resources that Emory provides. Placing a student on academic probation and recommendation for dismissal are actions we want to prevent.

4.2.1 Probation

A student will continue to be placed on probation if they are not making satisfactory progress. If a student enters probation, they will be notified in writing first by the DGS and then by LGS of the reason(s) that they were placed on probation. To exit the probationary semester, the student must meet all the following criteria:

- No F, U, IF, or IU in any course.
- No I grade in any course without permission from LGS.
- The number of incompletes on the academic record is no more than 1.
- Term GPA must be greater than or equal to a 2.7.

4.2.2 Recommendation of Dismissal

Any CS MS student who remains on probation for *two consecutive terms* will be recommended for dismissal unless the program provides written justification for the students' continuation and LGS grants approval. Note the CS MS program has more stringent requirements than outlined in the LGS handbook for dismissal recommendation.

4.2.3 Dismissal Appeals

The student can petition the program for a stay upon receiving a recommendation for dismissal. The student can submit a letter to the DGS that details any extenuating circumstances that contributed to their probationary status and presents a concrete, actionable plan for leaving probation and resuming satisfactory progress. Additionally, the student can ask a faculty member to submit a letter of support to the DGS.

These letters must be received within two weeks after the student is notified of their probationary status. The MS Graduate Committee will review the appeal(s) and recommend that the appeal is either accepted or denied. Any faculty who issued grades that led to probation will be excluded from the committee. If the appeal is accepted, then the program will notify LGS the student is no longer recommended for dismissal. Note that LGS can still proceed with the dismissal even though the program does not recommend it. If the appeal is denied, then the student is subject to dismissal. Students can petition for a maximum of two one-term extensions.

5 Other Policies and Services

5.1 Grievance Policy

Students who have a grievance related to the CS MS graduate program should report it to the DGS. The student should describe the grievance and relevant details in a letter addressed to the DGS. The grievance shall be no longer than five (5) single-spaced pages and should include a concise statement of the grievance, a description of the previous efforts to resolve the problem, a clear statement of the remedy sought, and supporting evidence for claims made in the complaint. The DGS will try to resolve the grievance in conversations with the student and relevant parties. If this is unsuccessful, the DGS will appoint a committee of three program faculty members or use an existing standing committee, who will review the grievance and propose an appropriate response. If it is not possible to resolve the grievance within this committee or the framework of the program's administrative structure, the student should initiate or file a grievance to the Office of the Senior Associate Dean of LGS if they wish to take it to another level. At that time, the grievance will be handled according to the Grievance Procedure described in the LGS Handbook. If the grievance is with the DGS, the student submits the grievance directly to the Senior Associate Dean of LGS.

5.2 Parental Arrangement Policy

LGS Parental Arrangement Policy is for students with substantial parenting responsibility as a result of childbirth, care of newborn, or a newly adopted child. This policy guarantees all LGS graduate students a minimal level of accommodation during the transition to parenthood. For more information on the policy, eligibility requirements, and application procedure, go to this link:
https://www.gs.emory.edu/academics/policies-progress/parental-arrangement.html

5.3 Department of Accessibility Services (DAS)

Emory provides all persons an equal opportunity to participate in and benefit from programs and services afforded to others. The Department of Accessibility Services (DAS), part of the Office of Institutional Equity and Compliance, assists qualified students, faculty, and staff with obtaining a variety of services and ensures that all matters of equal access, reasonable accommodation, and compliance are properly addressed. DAS is committed to providing access to campus resources and opportunities to allow students with disabilities to obtain a quality educational experience.

Qualified students need to register with DAS and make a request for services. Confidentiality is honored and maintained: http://accessibility.emory.edu/students/index.html

5.4 Student Support Services

Graduate school can be a stressful time for your body and mind. Be sure you are taking care of yourself. Go to LGS student support page and the LGS support page for links to all student support services available to you:

http://www.gs.emory.edu/guides/students/support.html

5.5 English Language Support Program

For students whose native language is not English, LGS provides English language enhancement workshops. The LGS English Language Support Program (ESLP) will invite all incoming CS MS students to undertake a language ability assessment. Results of the assessment are used to recommend non-obligatory participation in a 2-credit hour, semester-long, English language workshop. Students whose undergraduate language of instruction was not English will likely benefit most from this workshop, but all students are eligible to participate.

5.6 EEO Employer-Disability/Veteran Statement

Emory is an equal opportunity employer, and qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, disability, protected veteran status or other characteristics protected by state or federal law. Emory University does not discriminate in admissions, educational programs, or employment, including recruitment, hiring, promotions, transfers, discipline, terminations, wage and salary administration, benefits, and training. Students, faculty, and staff are assured of participation in university programs and in the use of facilities without such discrimination. Emory University complies with Section 503 of the Rehabilitation Act of 1973, the Vietnam Era Veteran's Readjustment Assistance Act, and applicable executive orders, federal and state regulations regarding nondiscrimination, equal opportunity, and affirmative action (for protected veterans and individuals with disabilities). Inquiries regarding this policy should be directed to the Emory University Department of Equity and Civil Rights Compliance, 201 Dowman Drive, Administration Building, Atlanta, GA 30322. Telephone: 404-727-9867 (V) | 404-712-2049 (TDD).

5.7 University Policies

A selection of university policies can be found at this link:
https://policies.emory.edu/

Every effort has been made to make this document as accurate and complete as possible. Policies are subject to change without notice. Refer to the latest LGS Handbook available at https://gs.emory.edu/academics/policies-progress/index.html for other policies such as:

- University Policies
- Honor and Conduct Code
- Minimum Degree Requirements
- Professional Development Funds
- Withdrawals and Leaves of Absences
- Parental Arrangements and Leaves
- Degree Completion & Graduation

6 Appendix A: MS CS Course Listing

* = Elective if and only if the course is formally taught and evaluated; i.e. seminar style or directed study courses can not be used to fulfill elective requirements

Algorithms Subject Area Requirement – CS MS students must take 1 of the following courses. Courses not used to fulfill the requirement can be taken as an elective.		
Course Number	**Course Name**	**Credits**
CS 523	Data Structure & Algorithms I	3
CS 526	Algorithms	3
Intelligent Systems Subject Area Requirement – CS MS students must take 1 of the following courses. Courses not used to fulfill the requirement can be taken as an elective.		
Course Number	**Course Name**	**Credits**
CS 534	Machine Learning	3
CS 557	Artificial Intelligence	3
CS 570	Data Mining	3
Computer Systems Subject Area Requirement – CS MS students must take 1 of the following courses. Courses not used to fulfill the requirement can be taken as an elective.		
Course Number	**Course Name**	**Credits**
CS 551	Systems Programming	3
CS 554	Database Systems	3
CS 580	Operating Systems	3
Electives Requirement – CS MS students must take 7 courses for Coursework Option, 5 courses for Project Option, or 4 Courses for Thesis Option		
BIOS 506	Foundations of Biostatistical Methods	4
BIOS 507	Applied Regression Analysis	4
BIOS 510	Intro. to Probability Theory	4
BIOS 511	Introduction to Statistical Inference	4
BIOS 707	Advanced Linear Models	4
BIOS 709	Generalized Linear Models	4
BIOS 711	Statistical Inference II	4
BIOS 731	Advanced Statistical Computing	2
BIOS 738	Bayesian and Empirical Bayes Methods	2
BIOS 770	Advanced Statistical Genetics	2
BMED 6517	Machine Learning in Biosciences	3
BMED 6700	Biostatistics	3
BMI 500	Introduction to Ethical Data Science and Informatics	3
BMI 510	Biostatistics for Machine Learning	4
BMI 532	Model-Based Machine Learning	3
BMI 534	Introduction to Machine Learning	3
BMI 536	Introduction to Deep Learning	3

BMI 539	Topics in Machine Learning	3
BMI 540	Time Series Analytics and Modeling	3
BMI 550	Applied Biomedical Natural Language Processing	3
BMI 555	Computational Methods for Biomedical Image Analysis	3
BMI 585*	Topics in Biomedical Informatics (Various)	3
CS 512	Ethics in Computing and AI	3
CS 514	Foundations in Human Computer Interaction	3
CS 523	Data Structure & Algorithms I	3
CS 524	Theory of Computing	3
CS 526	Algorithms	3
CS 527	Spatial Computing	3
CS 529	Structure of Information Networks	3
CS 534	Machine Learning	3
CS 540	Software Engineering	3
CS 541	Information Visualization	3
CS 551	Systems Programming	3
CS 552	Computer Architecture II	3
CS 553	Info. and Computer Security	3
CS 554	Database Systems	3
CS 555	Parallel Processing	3
CS 556	Programming Languages and Compilers	3
CS 557	Artificial Intelligence	3
CS 558	Networking	3
CS 559	Distributed Processing	3
CS 560	Computer Graphics	3
CS 561	Software Systems	3
CS 562	Advanced Computer Systems	3
CS 563	Digital Image Processing	3
CS 570	Data Mining	3
CS 571	Natural Language Processing	3
CS 572	Information Retrieval	3
CS 573	Data Privacy and Security	3
CS 580	Operating Systems	3
CS 581	High Performance Computing: Tools and Applications	3
CS 584*	Topics in Computer Science (Various)	3
MATH 511	Analysis I	3
MATH 512	Analysis II	3
MATH 515	Numerical Analysis I	3
MATH 516	Numerical Analysis II	3

MATH 517	Iterative Methods	3
MATH 531	Graph Theory	3
MATH 557	Partial Differential Equations I	3
MATH 558	Partial Differential Equations II	3
MATH 571	Numerical Optimization	3
MATH 572	Numerical Partial Differential Equations	3