Combined Advanced Degree Program

Bachelor of Science/Master of Science in Computer Science

Definitions

The description below uses the following terms:

- *CADP BS/MS in CS program*: The complete Combined Advanced Degree Program Bachelor of Science/Master of Science in Computer Science Degree Program, at the completion of which a student receives both a BS in Computer Science and an MS in Computer Science. A student enrolled in this program takes 12 credits less in order to receive both degrees than the number of credits required when obtaining the degrees separately.
- *BS/MS year*: This is normally the student's senior year. During the BS/MS year, the student who is accepted into the program enrolls in 12 credits of graduate Computer Science courses, as specified below. During this year the student completes the necessary requirements for the BS.
- \circ *MS/BS year*: This is the student's "+1" year. During this year the student completes the requirements for the graduate degree.

Procedures Overview

Procedures for applying and fulfilling the requirements of the Combined Advanced Degree Program BS/MS in Computer Science:

Step	Date	Procedure
1	Student's second semester of junior year,	Student submits application to the Department of
	after completing 75 credits	Computer Science for Combined Advanced Degree
		BS/MS program (deadlines and procedures below).
2	Upon acceptance into the CADP BS/MS in	Student and Computer Science Graduate Program
	CS program	Coordinator fill out a CADP Student Agreement form.
		Student is matriculated in the CADP BS/MS in CS.
3	Senior year	Student informs the Computer Science Graduate
		Program Coordinator which graduate classes they want
		to take. This must be done both semesters of BS/MS
		(senior) year!
4	When student has completed requirements	Student fill out the CADP Transition and Transfer
	for BS degree	form and submits it to Computer Science Graduate
		Program Coordinator and Department
		Chairperson/Head for approval. The approved form is
		submitted to the Graduate School and the student is
		enrolled in MS/BS year of the program.
5	When student has met all requirements of	Student applies for graduation for both the BS and MS
	both BS and MS degree	in CS degrees.

Program Details

This program allows highly motivated students to begin taking graduate courses in their senior year, accelerating their graduate studies while still at the undergraduate level and while paying undergraduate tuition and fees. The Combined Advanced Degree BS/MS degree program allows interested and qualified students to complete the department's Bachelors of Science and Master of Science degrees in a shorter time, usually in five years rather than the normal six.

Requirements for Application

- Be enrolled in the BS Computer Science Degree Program at Rowan University.
- Have completed at least 75 credits towards the BS in Computer Science and will be able to complete all BS requirements in two addition semesters.
- Have completed at least 24 credits of undergraduate Computer Science courses (listed in the <u>Combined Advanced Degree in CS Program application</u>) at Rowan University with an average Computer Science GPA of at least 3.5.
- Obtain two letters of recommendation from faculty members in the Rowan ComputerScience Department.

Application Process

Admission to the program will be based on the student meeting the above-listed criteria and an application packet. This application packet, which includes 2 letters of recommendation, the Combined Advanced Degree BS/MS in Computer Science application form, and the CADP Student Agreement and Confirmation Form, must be submitted to the Graduate Program Coordinator of the Computer Science Department by the application deadline listed below. This application packet can be obtained from the Computer Science Department website at <u>CADP in CS application</u>.

Application Deadlines

Deadlines for applying to the program are as follows:

- Fall March 1st
- Spring October 1st

Admission

Final admission decisions will be made by a Graduate Admissions Committee chaired by the Computer Science Graduate Program Coordinator and communicated to the applicants.

Satisfactory Standing and Progress towards Graduation

In order to graduate from the Combined Advanced Degree BS/MS Computer Science program all students must meet the following requirements:

- 1. Completion of all the requirements for the BS in CS by the end of senior year: Up to 6 semester hours of graduate CS courses taken by the student each semester of their senior year (BS/MS year of program) may count as undergraduate CS restricted elective credits towards the BS in CS.
- 2. Completion of all requirements for the MS in CS.
- 3. Full-time status:
 - a. Maintain full-time status each semester as an undergraduate student (minimum enrollment of 12 semester hours) during their BS/MS year of the program.
 - b. Maintain full-time status each semester as a graduate student (minimum enrollment of 9 semester hours of graduate Computer Science courses) during their MS/BS (+1) year of the program.
 - c. A student who fails to maintain full-time status during any semester of the Program (except the semester in which the student expects to complete the Program) will be dismissed from the Program at the end of that semester. Moreover, any student who has not completed requirement 1 above will be re- admitted back into the BS Computer Science Degree Program subject to the requirements of that program.
 - d. Students with extenuating circumstances may request an exception to requirements (a)-(c) above by obtaining written approval of the Computer Science Graduate Program Coordinator, Computer Science Department Chairperson/Head, and any other approvals that are required under university policy.
- 4. Satisfactory academic progress:
 - a. Completion of at least 2 graduate Computer Science courses by the end of the BS/MS year of the program.
 - b. Earn at least a grade of B in all graduate courses taken during the BS/MS year of the program.
 - c. Comply with all requirements of the MS in CS outlined in <u>Graduate Academic Policies</u>. The MS in CS is a Category 3 program: "No more than two total C gradesof any combination of "C+" or "C" can be counted toward courses required and counted for graduation/program completion. (C- grades and anygrade lower than a "C" are not acceptable.)"
 - d. Completion of the program by the end of the +1 year of the program.

The academic progress of every student in the program is reviewed at the end of each semester of the program and any student who fails to maintain satisfactory progress as described in parts (a)-(c) above may be dismissed from the program.

Students with extenuating circumstances may request an exception to this requirement by obtaining written approval of the Computer Science Graduate Program Coordinator, Computer Science Department Chair/Headperson, and any other approvals that are required under university policy.

At any time while the student is in the CADP program they may submit a written request to revert to the BS program. If all the requirements of the BS in Computer Science degree are met, the student will be able to apply for graduation with the BS in CS degree.

Dismissal from the Program

If a student does not fulfill the requirements for satisfactory progress towards graduation and is dismissed from the program the following applies:

- If the student has not already completed the requirements of the BS Computer Science Degree at this point, then they will be re-admitted back into the BS Computer Science Degree Program subject to the requirements of that program.
- If the student has completed the requirements for the BS degree, they can apply for and will be awarded the BS in Computer Science degree and are eligible for applying for admission to the MS in Computer Science program. In this case, Senior Privilege transfer policies apply, under which up to 6 eligible graduate credits can be transferred to the graduate transcript.

Graduation

After completion of all requirements listed in 1-4 under *Satisfactory Progress towards Graduation*, students must apply to receive simultaneously the Bachelor of Science in Computer Science and the Master of Science in Computer Science. These degrees are awarded as separate diplomas.

Tuition Costs

Students enrolled in the BS/MS year of the program will pay undergraduate tuition and fees for all courses—whether the courses are undergraduate or graduate—until they are accepted into the MS/BS year. Upon transition into the MS/BS year, students will pay graduate tuition and fees for all courses and all graduate requirements apply. Under no circumstances are students allowed to take more than 12 graduate credits while they are enrolled into BS/MS program as undergraduate students or more than 6 graduate credits per semester.

Structure of the Program

The Combined Advanced Degree BS/MS in CS is structured so that students first complete requirements for the BS in CS Degree Program, but begin to take graduate courses required for the MS in CS Degree Program in the first semester of their senior year. In particular, the number of graduate CS courses that each student should enroll in each semester is listed in the table below:

Semester of CADP in CS	Number of graduate CS courses
1st (First semester of Senior Year - typically Fall)	2
2 nd (Second semester of Senior Year - typically Spring)	2
3 rd (First semester of Graduate Year- typically Fall)	3
4th (Second semester Graduate Year- typically Spring)	3

MS in Computer Science Degree Program

Program Requirements

The MS in Computer Science is a 30 credit-hour program with an optional thesis track. All students must complete 12 credits of core courses (4 courses). Students in the thesis track must take 12 additional credits of electives and the 6-credit thesis sequence or if approved 9 additional credits of electives and the 9-credit thesis sequence. Students choosing the non-thesis track must take 18 additional credits of electives, 6 credits of which must be classified as **project intensive**.

Any core course can be taken as an elective.

Students can choose a **maximum** of 6 credits of **approved** graduate electives from graduate programs in the field of Electrical and Computer Engineering, Mathematics, Management Information Systems, Data Analytics, or Bioinformatics. Only 3 credits from the graduate program in Management Information Systems could be counted towards electives for a graduate degree in Computer Science.

Any graduate course taken outside of Rowan-CS must be **approved** prior to registration by the CS Graduate Program Committee. Such an approval is on an individual basis. The interested student must submit in writing to the CS Graduate Program Coordinator an explanation as to why they are interested in the course and how the course addresses one or more of the goals of the MS in Computer Science program. The student can expect a response from the Graduate Committee within 10 business days.

The MS in Computer Science Program Goals

- **Program Goal 1**: MS Computer Science graduates are able to design, analyze, implement, and evaluate computer systems and applications as part of a major course project, as well as effectively communicate key aspects of these projects.
- **Program Goal 2**: MS Computer Science graduates are prepared to engage in continuing professional development and research as a result of independent exploration and learning
- **Program Goal 3**: MS Computer Science graduates understand core areas of Computer Science and apply this knowledge to solving computing problems.

Tracks:

The program includes two tracks – a thesis track and a non-thesis track.

- Thesis Track: Students in the thesis track may choose to take a 6-credit thesis sequence or a 9 credit thesis sequence. Their remaining 9 or 6 credits may be additional core courses and/or electives.
- Non-Thesis Track: Students choosing the non-thesis track must take 18 additional credits of elective or core courses.

Graduate Course Offerings

Graduate course offerings for can be found in the <u>Section Tally</u> by choosing the appropriate semester, as department "CSCI- Computer Science" and as attribute "GRAD – Graduate Lvl crses 500 and up". Students can only register for courses that are offered on the Main and Camden campuses. The Camden campus is easily accessible from the main campus by free Rowan University shuttle. The catalog description of the courses offered can be found by clicking on the course CRN. Students cannot register for courses offered as part of our extension programs.

Students accepted into the program are expected to be well versed in programming, discrete mathematics, computer organization/architecture, direct interactions with operating systems, data structures, and algorithmic thinking either through undergraduate course work or work experience. Students not meeting all of these criteria may be accepted into this master's

program but will be required to complete one or two computer science bridge courses before enrolling into other computer science graduate courses. These courses are:

- CS 01501 Essential of Computer Science I*
- CS 01502 Essentials of Computer Science II*

*CS 01501 and CS 01502 will not count toward the 30 graduate credits needed for degree completion.

Ensuring Academic Success

The success of our graduate students is essential to the Computer Science Department and to Rowan University. Therefore, in order to ensure progress towards graduation and academic success, it is important for CADP in CS students to stay in regular contact with the Graduate

Program Coordinator and to get advice on courses, to check academic progress as well as communicate any concerns, questions or general student issues. Do not hesitate to contact Dr. Ho at <u>hos@rowan.edu</u>.

It is the students' responsibility to make sure that they have the necessary background for every course they take. In order to ensure that, the students are encouraged to contact the instructor of the course to enquire about the expected necessary background. If a student is lacking the necessary background for a course, it is the student's responsibility to supplement with self-study in preparation for the course.

Thesis Requirements

Rowan students pursuing a *thesis-track* MS in Computer Science degree have to write and defend a thesis. In addition, as part of their fulfillment for graduation, are required to submit their thesis to the Office of Graduate Research Services for final format approval. The Office of Graduate Research Services coordinates the final format review process and is responsible for ensuring that all theses adhere to the format and style as prescribed in the <u>Thesis &</u> <u>Dissertation Manual</u> prior to final approval with the Registrar for graduation purposes.

For information regarding thesis final format review please see: https://rowanu.com/thesis.

Suggested Sequence of course work

-----4th YEAR (Senior) - CADP BS/MS in CS YEAR OF PROGRAM ------

FIRST SEMESTER (at least 12 s.h.) Graduate CS (as Restricted Elective) Graduate CS Core (as Restricted Elective) Required undergraduate courses <u>SECOND SEMESTER (at least 12 s.h.)</u> Graduate CS (as Restricted Elective) Graduate CS Core (as Restricted Elective) Remaining required undergraduate courses

-----5th YEAR (Graduate Student) - CADP MS/BS IN MS YEAR OF PROGRAM------

FIRST SEMESTER (9 s.h.) Graduate CS Core Graduate CS Elective Graduate CS Elective (or Graduate Thesis I if *thesis-track* chosen) <u>SECOND SEMESTER (9 s.h.)</u> Graduate CS Core Graduate CS Elective Graduate CS Elective (or Graduate Thesis II if *thesis-track* chosen)