

COMPUTATION AND COGNITION

Master of Engineering in Computation and Cognition (Course 6-9P)

The Department of Electrical Engineering and Computer Science (<https://catalog.mit.edu/schools/engineering/electrical-engineering-computer-science/#graduatestudytext>) and the Department of Brain and Cognitive Sciences (<https://catalog.mit.edu/schools/science/brain-cognitive-sciences/#graduatestext>) offer a joint curriculum leading to a Master of Engineering in Computation and Cognition (<https://catalog.mit.edu/degree-charts/master-computation-cognition-course-6-9p>) that focuses on the emerging field of computational and engineering approaches to brain science, cognition and machine intelligence. The curriculum provides flexibility to accommodate students with a wide diversity of interests in this area—from biologically-inspired approaches to artificial intelligence, to reverse engineering circuits in the brain. This joint program prepares students for careers that include advanced applications of artificial intelligence and machine learning, as well as further graduate study in systems and cognitive neuroscience. Students in the program are full members of both departments, with an academic advisor from the Department of Brain and Cognitive Sciences.

The Master of Engineering in Computation and Cognition (<https://catalog.mit.edu/degree-charts/master-computation-cognition-course-6-9p>) program builds on the Bachelor of Science in Computation and Cognition (Course 6-9) (<https://catalog.mit.edu/degree-charts/computation-cognition-6-9>). The master's program provides additional depth in computational and brain science through coursework and a substantial thesis. The student selects (with departmental review and approval) 42 units of advanced graduate subjects, which include two concentration subjects in biology and/or computational biology plus a third subject in electrical engineering and computer science and/or biology. A further 24 units of electives are chosen from a restricted departmental list of math electives.

The Master of Engineering degree also requires 24 units of thesis credit. While a student may register for more than this number of thesis units, only 24 units count toward the degree requirement.

Programs leading to the five-year Master of Engineering degree or to the four-year Bachelor of Science degree can be arranged to be identical through the junior year. At the end of the junior year, students with a strong academic record will be offered the opportunity to continue through the five-year master's program. A student in the Master of Engineering program must be registered as a graduate student for at least one regular (non-summer) term. To remain in the program and to receive the Master of Engineering degree, students will be expected to maintain a strong academic record. Admission to the Master of Engineering program is open only

to undergraduate students who have completed their junior year in the Course 6-9 Bachelor of Science program.

Financial Support

The fifth year of study toward the Master of Engineering degree can be supported by a combination of personal funds, an award, a fellowship, or a graduate assistantship. Assistantships require participation in research or teaching in the department or in one of the associated laboratories. Full-time assistants may register for no more than two scheduled classroom or laboratory subjects during the term, but may receive academic credit for their participation in the teaching or research program. Support through an assistantship may extend the period required to complete the Master of Engineering program by an additional term or two. Support is granted competitively to graduate students and will not be available for all of those admitted to the Master of Engineering program. If provided, departmental financial support for Master of Engineering candidates is normally limited to the first three terms as a graduate student, unless the Master of Engineering thesis has been completed or the student has served as a teaching assistant or has been admitted to the doctoral program, in which cases a fourth term of support may be permitted.

Inquiries

For additional information regarding teaching and research programs, contact the Academic Administrator, Department of Brain and Cognitive Sciences, Room 46-2005, 617-253-7403, or visit the department's website (<http://web.mit.edu/bcs>).