

Computer Science Requirements for the DMICE Educational Programs, Masters and PhD levels

Prerequisite. A prerequisite for admission to the PhD or Masters program is a passing grade (C or better) in a graded, college-level computer programming course, preferably taught in C, C++, Java, Python or PERL. Students will be assumed to understand the concept of datatypes and to be comfortable using variables, constants, strings, simple expressions, conditional statements, loops, simple input and output. The prerequisite course should be identifiable on the student's transcript. If there is a question of the appropriateness of the proposed prerequisite course, the student may be asked for further documentation such as a course description or a copy of the course syllabus. This documentation is not necessary for students who have taken the non-credit DMICE Introduction to Programming course. The prerequisite must be satisfied by the time the student has complete 18 credits in the program and before registering for BMI 540 or BMI 565 (see below).

Students who believe they have adequate programming experience from taking non-graded courses (such as continuing education courses), courses taught in another programming language, courses that were not primarily programming classes, or from self-teaching or on-the-job training may petition for waiver of the prerequisite requirement. To be exempted from the prerequisite, students must submit a **Request for Waiver Form** (and specified documents) for review by the program.

Computer Science Required Courses in the Clinical Informatics Track. Satisfactory completion of the Computer Science sequence is required for graduation unless students have received a waiver of this requirement. The Computer Science sequence in the CI track consists of 3 courses:

- BMI 540 Computer Science with Java Programming,
- BMI 544 Databases

and **one** of the following Individual Competency courses:

- BMI 542 Computer Networks,
- BMI 546 Software Engineering or
- BMI 548 Human Computer Interaction in Biomedicine.

Computer Science Required Courses in the Bioinformatics and Computational Biology Track.

Satisfactory completion of the Computer Science sequence is required for graduation unless students have received a waiver of this requirement. The Computer Science sequence in the BCB track consists of 3 courses:

- BMI 565 Bioinformatics Programming and Scripting
- BMI 544 Databases
- BMI 546 Software Engineering

Satisfactory completion entails a minimum grade of B in the required courses and a C in Individual Competency courses.

Students who have an undergraduate or graduate degree in Computer Science will be exempt from this requirement, although they may wish to take one or more of the courses in the series if the course

material was not covered in their undergraduate or graduate program. Students with significant educational or work experience in computer science, but without a degree, may petition for exemption from one or more courses in the computer science series. The student will, however, be required to take a total of 9 credits in the computer science series. To be exempted from the prerequisite or from one or more courses, the student must submit a **Request for Waiver Form** (and specified documents) for review by the program.

BMI 540 or BMI 565. All students enrolling in BMI 540 (Computer Science with Java Programming) or BMI 565 (Bioinformatics Programming and Scripting) will be required to take a pretest of their programming skills *unless the student has successfully completed the non-credit DMICE Introduction to Programming course*. Students should take this pretest as soon as possible after admission to the program, since failing the pretest may necessitate further undergraduate-level coursework by the student.