Accelerated Degree Completion Program: Computer Science

Admission Criteria

Applicants to the Accelerated Degree Completion Program are selected based on academic background and professional experience, and are expected to have completed a minimum of 64 transferable college semester credits (including courses in English composition, math, and introductory programming) and have demonstrated work experience.

Admission Requirements

Applicants are admitted on a competitive basis. A completed application includes:

• A BU Metropolitan College Application for Undergraduate Admission (bu.edu/met/apply)
• Official transcripts from all colleges and universities attended, issued directly from each institution
• Official high school transcript(s) or copy of GED
• An undergraduate Transfer Student Status Report Form from each school attended within the last three years
• A current résumé detailing the progression of your professional work experience
• A personal statement of 500 words, as described in the undergraduate application
• A nonrefundable $80 application fee, made payable to Boston University

Application Deadline

Applications for admission to each year’s September cohort are due by August 15. However, we recommend that you apply early.

Program Tuition per Semester

Current cost per credit is $450 plus a $60 Student Services Fee each semester. Book costs are included.

\[ \text{Tuition and schedules are subject to change.} \]

Estimated semester costs are based on Fall and Spring 2017/2018.

Financial Aid

For financial aid information, visit bu.edu/finaid/apply/met.

Speak to your HR department before submitting your application. Boston University programs are recognized by most corporations for tuition reimbursement and/or direct billing.

The Osher Reentry Scholarship

Established at Boston University’s Metropolitan College by the Bernard Osher Foundation, the Osher Reentry Scholarship helps eligible adults resume coursework toward their first bachelor’s degree after a significant hiatus in their studies.

The scholarship can be applied to most undergraduate degree programs at Metropolitan College, including the Accelerated Degree Completion Program.

To find out how to apply, visit bu.edu/met/isher, call 617-353-2980, or email metuss@bu.edu.
Accelerated Degree Completion Program: Computer Science

Program Curriculum

The Accelerated Degree Completion Program consists of sixteen course modules, totaling 64 credits: five arts and sciences courses plus eleven computer science courses. Successful completion of the program leads to a Bachelor of Science in Computer Science from Boston University.

Course Descriptions

FALL 2017

MET IS 401 Communication Skills 1
This course focuses on the development of oral and written communications, with special attention to writing skills and oral presentation abilities. 4 cr

MET CS 232 Programming with Java
This course covers the elements of object-oriented programming and the Java programming language. Primitive data types, control structures, methods, classes, arrays and strings, inheritance and polymorphism, interfaces, creating user interfaces, applets, exceptions and streams. Laboratory course. 4 cr

MET CS 248 Introduction to Discrete Mathematics
Fundamentals of logic (the laws of logic, rules of inferences, quantifiers, proofs of theorems), fundamental principles of counting (permutations, combinations), set theory, relations and functions, graphs, trees and sorting, shortest path and minimal spanning trees algorithms. Monoids and Groups. 4 cr

SPRING 2018

MET CS 472 Computer Architecture (Prerequisite: MET CS231 or CS232)
Computer organization with emphasis on processors, memory, and input/output. Includes pipelining, ALUs, caches, virtual memory, parallelism, measuring performance, and basic operating systems concepts. Discussion of assembly language instruction sets and programming as well as internal representation of instructions. 4 cr

MET CS 342 Data Structures with Java
This course covers data structures using the Java Programming Language. Topics include data abstraction, encapsulation, information hiding, and the use of recursion, creation, and manipulation of various data structures: lists, queues, tables, trees, heaps, and graphs, and searching and sorting algorithms. Laboratory course. 4 cr

MET HU 400 Great Works of the Modern Era
The twentieth century presented the most accelerated period of social evolution in human history: two World Wars were fought; technology developed at a dazzling pace; psychological exploration and scientific discovery assailed traditional conceptions of religion and the nature of reality; and the relation of the individual to society fluctuated as new social and political models originated. Our main focus will be the literature and film within this time frame, but parallel developments in art and music will also be discussed. 4 cr
Accelerated Degree Completion Program: Computer Science

Program Curriculum

Course Descriptions, continued

SUMMER 2018

**MET CS 432 IT Project Management**
This course provides comprehensive overview of IT Project Management and the key processes associated with planning, organizing and controlling of software projects. The course will focus on various knowledge areas such as project scope management, risk management, quality management, communications management, and integration management. Students will be required to submit a term paper. 4 cr

**MET CS 401 Introduction to Web Application Development**
This course focuses on building core competencies in web design and development. It begins with a complete immersion into HTML, essentially XHTML and Dynamic HTML (DHTML). Students are exposed to Cascading Style Sheets (CSS), as well as Dynamic CSS. The fundamentals of JavaScript language, including object-oriented JavaScript, are covered comprehensively. AJAX with XML and JSON are covered, as they are the primary means to transfer data from client and server. Open source libraries such as Prototype, jQuery and Mootools might optionally be covered, as they assist in building cross-browser web applications rapidly and efficiently. The PHP language will be presented and covered; however, students can use other server-side languages such as ASP.NET, Java (JEE), or Ruby on Rails (RoR) for their projects. The course will focus on MySQL as a relational database system with the final project. Students may use other databases with instructor approval. Students will work with either IIS 6 (or better) or Apache 2, using any conventional operating system when working on their term projects and class laboratories. 4 cr

FALL 2018

**10 MET MA 123 Calculus I** (Prereq: MET MA 118 or equivalent)
Students may receive credit for either MET MA 121 or MA 123; or, CAS MA 121 or MA 123, but not both. Limits; derivatives; and differentiation of algebraic functions. Applications to maxima, minima, and convexity of functions. The definite integral; the fundamental theorem of integral calculus; and applications of integration. 4 cr

**MET CS 575 Operating Systems**
Overview of operating system characteristics, design objectives, and structures. Topics include concurrent processes, coordination of asynchronous events, file systems, resource sharing, memory management, security, scheduling, and deadlock problems. 4 cr

**MET IS 400 Great Ideas in Western Thought**
This course focuses on the significant philosophical, scientific, and political concepts that underlie the foundations of modern Western history. In addition, students will examine some of the visionary ideas and insights that have excited passionate thinkers in the past, and which continue to do so today. The class will reflect on the social and political implications of those ideas in the twenty-first century. 4 cr
Accelerated Degree Completion Program: Computer Science

Program Curriculum

Course Descriptions, continued

SPRING 2019

MET CS 535 Computer Networks
Overview of data communication and computer networks, including network hardware and software, as well as reference models, example networks, data communication services and network standardization. The OSI and the Internet (TCP/IP) network models are discussed. The course covers each network layer in details, from the physical layer to the application layer, and includes an overview of network security topics. Other topics covered include encoding digital and analog signals, transmission media, protocols, circuit, packet, message, switching techniques, internetworking devices, topologies. LANs/WANs, Ethernet, IP, TCP, UDP, and web applications. Labs on network analysis. 4 cr

MET CS 422 Advanced Java Programming
Comprehensive coverage of object-oriented programming with cooperating classes. Implementation of polymorphism with inheritance and interfaces and in Java library containers. Programming with exceptions, stream input/output, and graphical AWT and Swing components. Threads, sockets, datagrams, and database connectivity are also covered in this course. Laboratory course. 4 cr

MET CS 473 Software Engineering
Techniques for the construction of reliable, efficient, and cost-effective software. Requirement analysis, software design, programming methodologies, testing procedures, software development tools, and management issues. Students plan, design, implement, and test a system in a group project. Laboratory course. 4 cr

SUMMER 2019

MET CS 579 Database Management*
This course provides a theoretical yet modern presentation of database topics ranging from data and object modeling to advanced topics such as using C++/Java to develop web-based database applications. Other topics covered—relational data model, SQL and manipulating relational data; applications programming for relational data bases; physical characteristics of databases; achieving performance and reliability with database systems; object-oriented and distributed information systems. 4 cr

MET IS 403 Natural Science in Contemporary Society
The natural sciences in the context of public policy. This course will focus on controversial and critical social, environmental, business, and political issues in the various disciplines of science. 4 cr

*May be applied to master's in Computer Science.
## Accelerated Degree Completion Program: Computer Science
### 2017–2019 Class Schedule

<table>
<thead>
<tr>
<th>SEMESTER/CLASS</th>
<th>COURSE #</th>
<th>DAY/TIME</th>
<th>DATE</th>
<th>FORMAT</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fall 2017</strong></td>
<td></td>
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<tr>
<td>Communication Skills 1</td>
<td>IS 401</td>
<td>5 weeks online:</td>
<td>9/11/17</td>
<td>Blended</td>
<td>4</td>
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<tr>
<td>&amp; 1 Sat. (10/21/17), on campus, 9 a.m.–4 p.m.</td>
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<tr>
<td>Programming With Java</td>
<td>CS 232</td>
<td>Tue., 6–8:45 p.m.</td>
<td>9/5/17</td>
<td>On-campus</td>
<td>4</td>
</tr>
<tr>
<td>Discrete Math</td>
<td>CS 248</td>
<td>Thu., 6–8:45 p.m.</td>
<td>9/7/17</td>
<td>On-campus</td>
<td>4</td>
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<tr>
<td><strong>Spring 2018</strong></td>
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<tr>
<td>Computer Architecture</td>
<td>CS 472</td>
<td>Thu., 6–8:45 p.m.</td>
<td>1/18/18</td>
<td>On-campus</td>
<td>4</td>
</tr>
<tr>
<td>Data Structures with Java</td>
<td>CS 342</td>
<td>Tue., 6–8:45 p.m.</td>
<td>1/23/18</td>
<td>On-campus</td>
<td>4</td>
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<tr>
<td>Great Works of the Modern Era</td>
<td>HU 400</td>
<td>Alternate Sat. (7), 9 a.m.–4 p.m.</td>
<td>1/27/18</td>
<td>On-campus</td>
<td>4</td>
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<td><strong>Summer 2018</strong></td>
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<tr>
<td>IT Project Management</td>
<td>CS 432</td>
<td>Mon. &amp; Wed., 6-9:30 p.m., for 6 weeks</td>
<td>5/23/18</td>
<td>On-campus</td>
<td>4</td>
</tr>
<tr>
<td>Introduction to Web Application Development</td>
<td>CS 401</td>
<td>Thu., 6-9:30 p.m. for 12 weeks</td>
<td>5/24/18</td>
<td>On-campus</td>
<td>4</td>
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<td><strong>Fall 2018</strong></td>
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<tr>
<td>Calculus I</td>
<td>MA 123</td>
<td>Tue., 6–8:45 p.m.</td>
<td>9/4/18</td>
<td>On-campus</td>
<td>4</td>
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<tr>
<td>Operating Systems*</td>
<td>CS 575</td>
<td>Thu., 6–8:45 p.m.</td>
<td>9/6/18</td>
<td>On-campus</td>
<td>4</td>
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<tr>
<td>Great Ideas in Western Thought</td>
<td>IS 400</td>
<td>Alternate Sat. (7), 9 a.m.–4 p.m.</td>
<td>9/15/18</td>
<td>On-campus</td>
<td>4</td>
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<td><strong>Spring 2019</strong></td>
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<tr>
<td>Computer Networks</td>
<td>CS 535</td>
<td>Tue., 6–8:45 p.m.</td>
<td>1/22/19</td>
<td>On-campus</td>
<td>4</td>
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<tr>
<td>Advanced Java Programming</td>
<td>CS 422</td>
<td>Thu., 6–8:45 p.m.</td>
<td>1/24/19</td>
<td>On-campus</td>
<td>4</td>
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<tr>
<td>Software Engineering</td>
<td>CS 473</td>
<td>Alternate Sat. (7), 9 a.m.–4 p.m.</td>
<td>1/26/19</td>
<td>On-campus</td>
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<td><strong>Summer 2019</strong></td>
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<tr>
<td>Database Management*</td>
<td>CS 579</td>
<td>Mon., 6-9:30 p.m. or 12 weeks</td>
<td>5/20/19</td>
<td>On-campus</td>
<td>4</td>
</tr>
<tr>
<td>Natural Science in Contemporary Society</td>
<td>IS 403</td>
<td>Tue. &amp; Thu., 6–9:30 p.m.</td>
<td>5/21/19</td>
<td>Blended</td>
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<tr>
<td>online + classroom for 6 weeks</td>
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