

BU Computer Science Degree Checklist*

| Required CS Courses (41 credits) | Credits | Grade | Semester/Year |
|---|---------|-------|---------------|
| COMPSCI 121 Object-Oriented Programming with Java | 4 | | |
| COMPSCI 122 Graphical User Interfaces in Java | 4 | | |
| COMPSCI 221 Advanced Java | 4 | | |
| COMPSCI 240 C and Assembly Language Programming | 3 | | |
| COMPSCI 255 Data Structures using C++ | 4 | | |
| COMPSCI 330 Computer Organization | 3 | | |
| COMPSCI 350 Org. of Programming Languages | 3 | | |
| COMPSCI 355 Analysis of Algorithms & Data Structures | 3 | | |
| COMPSCI 357 Principles of Database Design | 3 | | |
| COMPSCI 360 Computer Ethics, Social Impact & Security | 3 | | |
| COMPSCI 386 Operating Systems | 3 | | |
| COMPSCI 480 Object-Oriented Software Engineering | 4 | | |

| CS Electives (9 credits, at most 3 from internship) | Credits | Grade | Semester/Year |
|---|---------|-------|---------------|
| COMPSCI 323 Artificial Intelligence | 3 | | |
| COMPSCI 345 Mobile Device Application Development | 3 | | |
| COMPSCI 348 Data Mining | 3 | | |
| COMPSCI 356 Windows Programming | 3 | | |
| COMPSCI 375 Local Area Networks | 3 | | |
| COMPSCI 410 Computer Graphics | 3 | | |
| COMPSCI 430 Computer Architecture | 3 | | |
| COMPSCI 456 Theory of Computation | 3 | | |
| COMPSCI 457 Database Design II | 3 | | |
| COMPSCI 461 Internet Programming | 3 | | |
| COMPSCI 491 Special Topics | 3 | | |
| COMPSCI 497 Internship (2-12 credits) | | | |

* Last modified: May 13, 2020

BU Computer Science Degree Checklist

| Required Mathematics Courses (17 credits) | Credits | Grade | Semester/Year |
|--|---------|-------|---------------|
| MATH 125 Calculus I | 4 | | |
| MATH 126 Calculus II | 4 | | |
| MATH 185 Discrete Mathematics | 3 | | |
| MATH 141 Introduction to Statistics or MATH 241 Introduction to Probability and Statistics | 3 | | |
| Mathematics course 220 or higher | 3 | | |

| Mathematics and Science Electives (15 credits) | Credits | Grade | Semester/Year |
|---|---------|-------|---------------|
| Approved two-semester laboratory sequence (see last page for list of approved courses) | | | |
| 1. | | | |
| 2. | | | |
| Additional science course: (recommended: 4-credit lab course) Additional science course: (if needed to complete 15 credits) or Mathematics course (220 or higher): (if needed to complete 15 credits) | | | |

Science electives used above must come from the list on the last page of this document.

| Other Required Courses | Credits | Grade | Semester/Year |
|------------------------------------|---------|-------|---------------|
| ENGLISH 101 Foundations of Writing | 3 | | |
| INTSTUDY 231 Technical Writing | 3 | | |
| COMMSTUD 103 Public Speaking | 3 | | |

BU Computer Science Degree Checklist

| | COURSE GEPs SEM/YR GRADE | COURSE GEPs SEM/YR GRADE | COURSE GEPs SEM/YR GRADE | COURSE GEPs SEM/YR GRADE |
|---|---|---|---|---|
| Learning Outcome 1 Communication 7 GEPs needed (3 disciplines) | ENGLISH 101 3 | COMMSTUD 103 3 | INTSTUDY 231 2 | |
| Learning Outcome 2 Information Literacy 2 GEPs needed | INTSTUDY 231 1 | | | |
| Learning Outcome 3 Analytical/Quantitative 5 GEPs needed (2 disciplines) | MATH 125 2 | MATH 126 3 | Science Lab 1 | |
| Learning Outcome 4 Culture/History 5 GEPs needed (2 disciplines) | | | | |
| Learning Outcome 5 Natural Sciences 5 GEPs needed (2 disciplines) | MATH 125 1 | | | |
| Learning Outcome 6 Social Sciences 5 GEPs needed (2 disciplines) | | | | |
| Learning Outcome 7 Arts and Humanities 5 GEPs needed (2 disciplines) | | | | |
| Learning Outcome 8 Second Language 2 GEPs needed | | | | |
| Learning Outcome 9 Health 2 GEPs needed | | | | |
| Learning Outcome 10 Citizenship 2 GEPs needed | | | | |

Approved Science Courses For BU Computer Science Majors

CS students must take an approved two-course science sequence (including the laboratory section for each course, if the laboratory section is separate). The approved sequences are:

| Approved Lab Sequences | | |
|---|---------------------|---|
| BIOLOGY 114-115 CHEM 115-116 | EGGS 120-130 | PHYSICS 201-202 (algebra) PHYSICS 211-212 (calculus) |

In addition to the two-course science sequence, CS students must take at least four additional credit hours in the sciences. They must also take a total of at least 30 credit hours in science and mathematics. All science courses satisfying these requirements must come from one of the following lists. Only general prerequisites in each discipline are noted in the following. Many courses have additional prerequisites.

| Biology | | |
|--|--------------------------------|--------------------------------------|
| 114: Concepts in Biology I (4) | 233: Human Genetics (3) | 342: Medical Microbiology (3) |
| 115: Concepts in Biology II (4) | 242: Microbiology (4) | 343: Immunology (3) |
| 211: Invertebrate Zoology (3) | 271: Cell Biology (4) | 350: Plant Pathology (3) |
| 212: Vertebrate Zoology (3) | 331: Embryology (3) | 351: Ecology (3) |
| 222: Comp Biology of Plants (3) | 332: Genetics (3) | 364: Vertebrate Histology (3) |

| Environmental, Geographical and Geological Sciences (EGGS) | | |
|--|---------------------------------|---|
| 120: Physical Geology I (4) | 259: Oceanography (3) | 320: Remote Sensing of Earth (4) |
| 130: Historical Geology I (4) | 260: Earth Materials (4) | 365: Intro to Paleontology (4) |
| 255: Meteorology (3) | 261: Mineralogy (4) | 369: Structural Geology (4) |
| | 262: Petrology (4) | 370: Surface Hydrology (3) |
| | 265: Geomorphology (4) | |

| Chemistry | | |
|-------------------------------------|---------------------------------|---------------------------------------|
| 115: Chem for Sciences I (4) | 232: Organic Chem II (4) | 342: Biochemistry II (4) |
| 116: Chem for Sciences I (4) | 321: Analytical Chem (3) | 361: Physical Chemistry I (4) |
| 230: Fund. Organic Chem (4) | 322: Analytical Chem (4) | 362: Physical Chemistry II (4) |
| 231: Organic Chem I (4) | 341: Biochemistry I (4) | 371: Intro Polymer Science (3) |

| Physics | | |
|------------------------------------|-------------------------------------|--|
| 111: Intro to Physics 1 (4) | 302: Mechanics/Dynam (3) | 317: Computer Electronics (3) |
| 112: Intro to Physics 2 (4) | 310: Modern Atomic (3) | 318: Optics (4) |
| 211: General Physics 1 (4) | 314: Elec/Magnetism (3) | 320: Nuclear Radiation (2) |
| 212: General Physics 2 (4) | 315: Electronics (4) | 340: The Stars (3) |
| 301: Mechanics/Statics (3) | 316: Digital Electronics (3) | 341: Galaxies and Cosmology (3) |

Upper-level biology courses have a prerequisite of BIOLOGY 115. Upper-level chemistry courses have a prerequisite of CHEM 116. Upper-level geoscience courses have a prerequisite of GEOSCI 120 or GEOSCI 130. Except for PHYSICS 316 and PHYSICS 317, upper-level physics courses have a prerequisite of PHYSICS 211. Calculus (MATH 125 or MATH 126) is required for many courses as either a prerequisite or co-requisite.