

# ACCELERATED DUAL-DEGREE BS IN BIOCHEMISTRY/MS IN MOLECULAR & CELL BIOLOGY (3+1)

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For highly qualified students, the Accelerated Dual-Degree BS in Biochemistry/MS in Molecular and Cell Biology (3+1) provides an opportunity for students to achieve both a Bachelor of Science in Biochemistry and a Master of Science within the field of Molecular and Cell Biology within a 4-year time frame typically associated with only an undergraduate education. The 3+1 program provides an excellent foundation for students intending to pursue studies in professional healthcare fields and doctoral programs. It also offers a competitive edge for students wishing to pursue a career in biotechnology and biopharmaceutical industries.

The requirements and policies for the undergraduate degree are the same as described on the Bachelor of Science in Biochemistry (<https://catalog.qu.edu/arts-sciences/chemistry-physical-sciences/biochemistry-bs/>) page, except that students in the 3+1 combined BS/MS program are expected to maintain a GPA of at least 3.00 at the end of each school year for continued participation in the program. The requirements and policies for the graduate degree are the same as described on the Master of Science in Molecular and Cell Biology (<http://catalog.qu.edu/graduate-studies/arts-sciences/molecular-cell-biology-ms/>) page.

Accelerated Dual-Degree BS in Biochemistry/MS in Molecular and Cell Biology (3+1) Recommended Curriculum

The minimum number of credits required for the undergraduate degree is 120, and the minimum number of credits required for the graduate degree is 34. A maximum of 12 graduate credits may be used to fulfill both undergraduate and graduate requirements. Students must use UC electives to satisfy the Modern Language requirement. Students in pre-medical programs are advised to take CHE 210, CHE 210L, CHE 211, CHE 211L, PHY 110, PHY 110L, PHY 111 and PHY 111L in an on-ground modality. MA 153 and MA 154 are not required to complete this program but are highly recommended.

| Code                           | Title  | Credits |
|--------------------------------|--|---------|
| <b>Year One: Fall Semester</b> |  |         |
| BIO 150                        | General Biology for Majors                   | 4       |
| BIO 150L                       | General Biology for Majors Laboratory        |         |
| CHE 110                        | General Chemistry I                          | 3       |
| CHE 110L                       | General Chemistry I Lab                      | 1       |
| EN 101                         | Introduction to Academic Reading and Writing | 3       |
| FYS 101                        | First-Year Seminar                           | 3       |
| MA 140                         | Pre-Calculus                                 | 3       |
| <b>Year One: January Term</b>  |  |         |
| UC Elective                    |  | 3       |
| <b>Year One: Spring Term</b>   |  |         |
| BIO 151                        | Molecular and Cell Biology and Genetics      | 4       |

|                                 |   |   |
|---------------------------------|---|---|
| BIO 151L                        | Molecular and Cell Biology and Genetics Lab |   |
| CHE 111                         | General Chemistry II                        | 3 |
| CHE 111L                        | General Chemistry II Lab                    | 1 |
| EN 102                          | Academic Writing and Research               | 3 |
| MA 141                          | Calculus of a Single Variable <sup>1</sup>  | 3 |
| UC Elective                     |   | 3 |
| <b>Year One: Summer Term</b>    |   |   |
| UC Elective                     |   | 3 |
| UC Elective                     |   | 3 |
| <b>Year Two: Fall Term</b>      |   |   |
| CHE 210                         | Organic Chemistry I                         | 3 |
| CHE 210L                        | Organic Chemistry I Lab                     | 1 |
| CHE 215                         | Analytical Chemistry                        | 3 |
| CHE 215L                        | Analytical Chemistry Lab                    | 1 |
| PHY 110                         | General Physics I <sup>2</sup>              | 3 |
| PHY 110L                        | General Physics I Lab                       | 1 |
| UC Elective                     |   | 3 |
| <b>Year Two: January Term</b>   |   |   |
| UC Elective                     |   | 3 |
| <b>Year Two: Spring Term</b>    |   |   |
| BIO 515                         | Advanced Biochemistry                       | 4 |
| CHE 211                         | Organic Chemistry II                        | 3 |
| CHE 211L                        | Organic Chemistry II Lab                    | 1 |
| CHE 305                         | Instrumental Analysis                       | 3 |
| CHE 305L                        | Instrumental Analysis Lab                   | 1 |
| CHE 315L                        | Biochemistry I Lab                          | 1 |
| PHY 111                         | General Physics II <sup>3</sup>             | 3 |
| PHY 111L                        | General Physics II Lab                      | 1 |
| <b>Year Two: Summer Term</b>    |   |   |
| UC Elective                     |   | 3 |
| UC Elective                     |   | 3 |
| <b>Year Three: Fall Term</b>    |   |   |
| BIO 571                         | Molecular Genetics                          | 4 |
| CHE 301                         | Physical Chemistry I                        | 3 |
| CHE 301L                        | Physical Chemistry I Lab                    | 1 |
| CHE 475                         | Chemistry Seminar I                         | 1 |
| CHE 490                         | Chemistry Research I                        | 3 |
| CHE Elective                    |   | 3 |
| <b>Year Three: January Term</b> |   |   |
| UC Elective                     |   | 3 |
| <b>Year Three: Spring Term</b>  |   |   |
| BIO 605                         | DNA Methods Laboratory                      | 4 |
| CHE 302                         | Physical Chemistry II                       | 3 |
| CHE 302L                        | Physical Chemistry II Lab                   | 1 |
| CHE 316                         | Biochemistry II                             | 3 |
| CHE 420                         | Chemistry Integrative Capstone              | 3 |
| CHE 476                         | Chemistry Seminar II                        | 1 |
| CHE 491                         | Chemistry Research II                       | 3 |
| <b>Year Three: Summer Term</b>  |   |   |
| Independent Study               |   | 3 |
| <b>Year Four: Fall Term</b>     |   |   |

|                               |   |            |
|-------------------------------|---|------------|
| BIO 568                       | Molecular and Cell Biology              | 4          |
| BIO 606                       | Protein Methods Laboratory              | 4          |
| Graduate Elective             |   | 3          |
| <b>Year Four: Spring Term</b> |   |            |
| BIO 675                       | Comp Exam in Molecular and Cell Biology | 2          |
| Graduate Elective             |   | 3          |
| Graduate Elective             |   | 3          |
| <b>Total Credits</b>          |   | <b>120</b> |

## Footnotes:

1. MA 151 may be substituted for MA 141.
2. PHY 121 may be substituted for PHY 110 and PHY 110L.
3. PHY 122 may be substituted for PHY 111 and PHY 111L.

The Accelerated Dual-Degree BS/MS program is designed for outstanding applicants. Students are offered acceptance into the program upon admission to Quinnipiac University.

## Admission Requirements: College of Arts and Sciences

The requirements for admission into the undergraduate College of Arts and Sciences programs are the same as those for admission to Quinnipiac University.

Admission to the university is competitive, and applicants are expected to present a strong college prep program in high school. Prospective first-year students are strongly encouraged to file an application as early in the senior year as possible, and arrange to have first quarter grades sent from their high school counselor as soon as they are available.

For detailed admission requirements, including required documents, please visit the Admissions (<http://catalog.qu.edu/general-information/admissions/>) page of this catalog.