QUEENS COLLEGE

## DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY

# Bachelor of Arts in Chemistry: Biochemistry concentration

## INTRODUCTORY COURSES REQUIREMENTS

| | Pre-requisite courses (C or better required) |
|---|---|
| ☐ CHEM 113.4. General Chemistry I<br>☐ CHEM 113.1. Introduction to Lab Techniques | ☐ MATH 115. College algebra or equivalent* |
| ☐ CHEM 114.4. General Chemistry II<br>☐ CHEM 114.1. Quantitative and Qualitative Analysis | ☐ MATH 122. Precalculus or equivalent**<br>☐ CHEM 113.4 and 113.1 |

*Placement into MATH 122, MATH 141, or MATH 151 fulfills this requirement.

**Placement into MATH 141 or MATH 151 by achieving a grade of 80 or better on MATH B Regents, a grade of 600 or better on the SAT Mathematics exam, or a grade of C– or better in MATH 122.

## INTERMEDIATE COURSES REQUIREMENTS

| | Pre-requisite or *co-requisite* courses.<br>(C or better required in all pre-requisite courses.) |
|---|---|
| ☐ CHEM 211. Thermodynamics and Kinetics | ☐ MATH 151. Calculus I (or MATH 141 and MATH 142)<br>☐ MATH 152. Calculus II (or MATH 143)<br>☐ *PHYS 145.4. Principles of Physics I*<br>☐ *PHYS 145.1. Principles of Physics I Lab* |
| ☐ CHEM 251.4. Organic Chemistry I<br>☐ CHEM 251.1. Organic Chemistry I Lab | ☐ CHEM 114.4. and 114.1. |
| ☐ CHEM 252.4. Organic Chemistry II<br>☐ CHEM 252.1. Organic Chemistry II Lab | ☐ CHEM 251.4 and 251.1. |

## ADVANCED COURSE REQUIREMENTS

| | Pre-requisite or *co-requisite* courses.<br>(C or better required in all pre-requisite courses.) |
|---|---|
| ☐ CHEM 331.3. Inorganic Chemistry (Fall only)<br>☐ CHEM 331.1*. Physical Inorganic Chemistry (Fall only) | ☐ CHEM 252.4. and 252.1.<br>☐ MATH 151 (or MATH 141 and 142). |
| ☐ CHEM 341.3. Instrumental Methods (Spring only)<br>☐ CHEM 341.1*. Instrumental Methods Lab (Spring only) | ☐ CHEM 252.4 and 252.1.<br>☐ CHEM 211.<br>(*can be taken as a co-req with permission of dept*)<br>☐ PHYS 145.4 and 145.1.<br>☐ *PHYS 146.4. and 146.1.* |
| ☐ CHEM 371. Biochemistry I | ☐ CHEM 252.4 and 252.1.<br>☐ BIOL 105. General Biology: Physiology and Cell Biology. |
| ☐ CHEM 372. Biochemistry II (Spring only) | ☐ CHEM 371. |
| ☐ CHEM 378. Physical Biochemistry (Spring only) | ☐ CHEM 211.<br>☐ CHEM 252.4 and 252.1.<br>☐ *CHEM 371.*<br>☐ *PHYS 146.4 and 146.1.* |
| ☐ CHEM 395*. Senior Thesis – Capstone course | ☐ Departmental permission and Senior standing. |

*Has been submitted as a writing intensive course. Check with department for status.

*more information on back*

## ADDITIONAL LABORATORY REQUIREMENTS

| | Pre-requisite or *co-requisite* courses.<br>(Grade of C or better required in pre-requisites unless otherwise stated). |
|---|---|
| **Advanced laboratory elective** | |
| ☐ CHEM 376. Biochemistry Laboratory | ☐ CHEM 371. Biochemistry I. with grade of C– or better. |

| **At least two additional credit hours chosen from below:** | |
|---|---|
| ☐ CHEM 291. (3 hr., 1 cr.) Introduction to Research in Chemistry and Biochemistry.<br>*May be taken up to 3 times for credit.* | ☐ CHEM 113.4 and 113.1.<br>☐ MATH 122.<br>☐ *CHEM 114.4. and 114.1.*<br>☐ *Permission of a research mentor in the department.* |
| ☐ CHEM 388*. Advanced Physical and Biophysical Chemistry Laboratory (Spring only) | ☐ CHEM 211.<br>☐ *CHEM 212 or 378.* |
| CHEM 391. Research in Chemistry and Biochemistry<br>*May be repeated for a maximum of 12 credits.*<br>☐ CHEM 391.1. (4 hr., 1 cr.)<br>☐ CHEM 391.2. (8 hr., 2 cr.)<br>☐ CHEM 391.3. (12 hr., 3 cr.) | ☐ CHEM 252.4 and 252.1 or CHEM 211 and 212 (or 378)<br>☐ *Permission of a research mentor in the department.* |
| HMNS 291. Intermediate Science Honors Research.<br>☐ HMNS 291.1 (3 hr., 1 cr.)<br>☐ HMNS 291.2 (6 hr., 2 cr.)<br>☐ HMNS 291.3 (9 hr., 3 cr.) | ☐ HMNS 102<br>☐ *Permission of HMNS director.*<br>☐ *Permission of a research mentor in the department* |
| HMNS 391. Advanced Science Honors Research.<br>☐ HMNS 391.1 (3 hr., 1 cr.)<br>☐ HMNS 391.2 (6 hr., 2 cr.)<br>☐ HMNS 391.3 (9 hr., 3 cr.) | ☐ 3 credits of HMNS 291<br>☐ *Permission of HMNS director.*<br>☐ *Permission of a research mentor in the department* |

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