Duluth Campus

Biochemical Engineering Minor

Chemical Engineering

Swenson College of Science and Engineering

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2015
- Required credits in this minor: 46 to 47

Significant advances in the biological sciences and engineering have had a dramatic effect on the environmental, chemical, and health care industries. Chemical engineering programs have become more diversified to include curriculum in biochemical engineering. The biochemical engineering minor provides students with additional training in this growing field beyond their traditional coursework. Students will gain the basic knowledge of the biological sciences and design as applied to bioreactor engineering and downstream processing.

The influence of the biological sciences in all academic disciplines within the sciences and engineering continues to expand. Any student may pursue a minor in biochemical engineering.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Minor Requirements

Biochemical Engineering Courses

Biology I

BIOL 1011 - General Biology I [LE CAT, NAT SCI] (5.0 cr)

Chemistry I with lab

CHEM 1153 - General Chemistry I [LE CAT, NAT SCI] (4.0 cr)

CHEM 1154 - General Chemistry Lab I [LE CAT, NAT SCI] (1.0 cr)

Chemistry II with lab

CHEM 1155 - General Chemistry II (4.0 cr)

CHEM 1156 - General Chemistry Lab II (1.0 cr)

Organic Chemistry I with lab

CHEM 2541 - Organic Chemistry I (3.0 cr)

CHEM 2543 - Organic Chemistry I Laboratory (1.0 cr)

Organic Chemistry II with lab

CHEM 2542 - Organic Chemistry II (3.0 cr)

CHEM 2544 - Organic Chemistry II Laboratory (1.0 cr)

Biochemistry

CHEM 3322 - Biochemistry (3.0 cr)

CHEM 3324 - Biochemistry Laboratory (1.0 cr)

or CHEM 4351 - Biochemistry I (3.0 cr)

CHEM 4363 - Biochemistry Laboratory (2.0 cr)

Math

MATH 1296 - Calculus I [LE CAT, LOGIC & QR] (5.0 cr)

or MATH 1596 *{Inactive}*[LE CAT2, LOGIC & QR] (5.0 cr)

MATH 1297 - Calculus II [LOGIC & QR] (5.0 cr)

or MATH 1597 *{Inactive}*[LOGIC & QR] (5.0 cr)

Engineering

CHE 2111 - Material and Energy Balances (3.0 cr)

Biochemical Engineering I & II

CHE 4601 - Biochemical Engineering I (3.0 cr)

CHE 4701 - Biochemical Engineering II (3.0 cr)

or CHE 5701 - Biochemical Engineering II (3.0 cr)

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