BIOCHEMISTRY (THESIS): BIOINFORMATICS (M.SC.) (45 CREDITS)

Offered by: Biochemistry (Faculty of Medicine and Health Sciences)
Degree: Master of Science
Program credit weight: 45

Program Description

The M.Sc. in Biochemistry; Bioinformatics involves the development of strategies for experimental design, the construction of computer science tools to analyze large datasets, the application of modelling techniques, the integration of biological databases, and the use of algorithms and statistics. Permission of the Graduate Program Director to enroll in this concentration is required to ensure that the proposed research thesis focusses on bioinformatics related to biochemistry.

Note: For information about Fall 2025 and Winter 2026 course offerings, please check back on May 8, 2025. Until then, the "Terms offered" field will appear blank for most courses while the class schedule is being finalized.

Thesis Courses (30 credits)

Expand allContract all

Course	Title	Credits
BIOC 694	Thesis Research 1 - Bioinformatics	6
BIOC 698	Thesis Research 2.	12
BIOC 699	Thesis Research 3.	15

Required Courses (6 credits)

Expand allContract all

Course	Title	Credits
BIOC 696D1	Seminars in Biochemistry.[1]	1.5
BIOC 696D2	Seminars in Biochemistry.[1]	1.5
BIOC 696N1	Seminars in Biochemistry.[1]	1.5
BIOC 696N2	Seminars in Biochemistry.[1]	1.5
QLSC 601D1	Quantitative Life Sciences Seminars 1.	0
QLSC 601D2	Quantitative Life Sciences Seminars 1.	0

[1] Students choose either BIOC 696D1/D2 or BIOC 696N1/N2.

Complementary Courses[1] (9 credits)

[1] Complementary courses are chosen in consultation with the Research Director.

3 credits to be chosen from the following courses:

Expand allContract all

Course	Title	Credits
BIOC 600	Advanced Strategies in Genetics and Genomics.	3
BIOC 603	Genomics and Gene Expression.	3
BIOC 604	Macromolecular Structure.	3
BIOC 605	Protein Biology and Proteomics.	3
BIOC 670	Biochemistry of Lipoproteins.	3
EXMD 615	Essentials of Glycobiology.	3
EXMD 635D1	Experimental/Clinical Oncology.	3
EXMD 635D2	Experimental/Clinical Oncology.	3

6 credits from the following courses:

Expand allContract all

Course	Title	Credits
BINF 621	Bioinformatics: Molecular Biology.	3
BMDE 652	Bioinformatics: Proteomics.	3
BTEC 555	Structural Bioinformatics.	3
COMP 618	Bioinformatics: Functional Genomics.	3
PHGY 603	Systems Biology and Biophysics.	3

The Graduate Advisory Committee may stipulate additional coursework depending on the background of the candidate. BIOC 450 Protein Structure and Function. and BIOC 454 Nucleic Acids. are additional requirements for those who have not previously completed equivalent courses in their prior training.