BIOMEDICAL INFORMATICS

Program Overview

Queen's School of Computing (QSC) and the Department of Biomedical and Molecular Sciences (DBMS), Queen's University, have developed the Graduate Diploma and professional Master's programs in Biomedical Informatics. The programs train future data scientists who can translate data into knowledge that may transform how health care is approached and delivered. The programs are aimed at students with training in biology, life sciences, biochemistry, medical sciences, computer science, biostatistics, engineering, and related disciplines, who are interested in designing and implementing quantitative and computational methods that solve challenging problems across the entire spectrum of biology and medicine, and who wish to develop the skills required for a range of exciting careers in medicine, research and development, or industry.

The focus of these programs is on the application of existing tools and techniques for managing and analysing biomedical data.

Admission Requirements

To be considered for admission to the Graduate Diploma in Biomedical Informatics and Professional Master's in Biomedical Informatics, an applicant must hold a minimum of a BSc (Honours) degree in biology, life sciences, biochemistry, medical sciences, computer science, biostatistics, engineering, and related disciplines from a recognized university or equivalent. The minimum acceptable average for admissions to these programs is B+ in the third and fourth years of the student's undergraduate program (all courses considered). Students applying from outside of North America whose native language is not English are required to submit TOEFL (or equivalent) scores. It is recommended that applicants have undergraduate training in biostatistics and experience in scientific computation. An assessment of these skills will be done immediately upon entry into the program enabling the identification of knowledge gaps and the subsequent development of a specific plan of study for each student when necessary. Although the program is aimed at recent graduates from undergraduate programs, applicants from professional programs such as medicine and nursing are also welcome.

Applications will be welcome from qualified under-represented groups.

Programs

- Biomedical Informatics - Graduate Diploma (https://queensu-ca-public.courseleaf.com/graduate-studies/programs-study/biomedical-informatics/biomedical-informatics-graduate-diploma/)
- Biomedical Informatics - Master of Biomedical Informatics (https://queensu-ca-public.courseleaf.com/graduate-studies/programs-study/biomedical-informatics/biomedical-informatics-mbi/)

Courses

All courses are 3.0 credit units, except BMIF 898, which is 6.0 credit units.

BMIF 801 Programming Skills and Tools for Processing Biomedical Data
The objective of this course is to provide graduating health science students hands-on training in computer programming languages and tools to familiarize them with the principles and practice of cutting edge technologies for bioinformatics used in biomedical and molecular sciences research. (3.0 credit units)

BMIF 802 Biomedical Data Analysis
The objective of this course is to provide graduating health science students hands-on training in the analysis of biomedical datasets to familiarize them with the principles and practice of cutting edge technologies for bioinformatics used in biomedical and molecular sciences research. (3.0 credit units)

BMIF 803 Data Mining and Applications
The objective of this course is to provide graduating health science students with hands-on training in data mining to familiarize them with the principles and practice of cutting edge technologies for bioinformatics used in biomedical and molecular sciences research.(3.0 credit units)

BMIF 804 Medical Imaging Informatics
This course will deliver the foundations, principles, and practices of medical imaging, their acquisition, management, exploration, analysis and interpretation with focus on practical tools and informatics skills. (3.0 credit units) PREREQUISITE: Permission of the School and enrollment in the Professional Diploma program in Biomedical Informatics.

BMIF 898 Master's Project
A major programming project is undertaken under the supervision of a School member. The presentation of a seminar to describe the project is required. (6.0 credit units)