

BIOINFORMATICS (BINF)

BINF*6110 Genomic Methods for Bioinformatics Winter Only [0.50]

This course provides an introduction to current and emerging methods used to generate genomic data analyzed in bioinformatics. This may include techniques for DNA sequencing as well as transcriptome, proteome and metabolome analysis. The objective is to develop an appreciation for the challenges of producing data.

Offering(s): Annually

Restriction(s): Restricted to Bioinformatics students.

Department(s): Dean's Office, College of Biological Science

Location(s): Guelph

BINF*6210 Software Tools for Biological Data Analysis and Organization Fall Only [0.50]

This course familiarizes students with tools for the computational acquisition and analysis of molecular biological data. Key software for biological data acquisition, management, analysis, and visualization are presented. Laboratory exercises guide students through application of relevant tools.

Offering(s): Annually

Department(s): Dean's Office, College of Biological Science

Location(s): Guelph

BINF*6410 Bioinformatics Programming Fall Only [0.50]

This course introduces students to computer programming in languages relevant for contemporary bioinformatics. Students apply these programming skills to perform bioinformatics data analyses.

Offering(s): Annually

Department(s): Dean's Office, College of Biological Science

Location(s): Guelph

BINF*6420 Biosequence Pattern Analysis Winter Only [0.50]

This course is an overview course on different approaches to analyze biological sequences. Basic concepts are introduced, as well as related algorithms.

Offering(s): Annually

Restriction(s): Restricted to Bioinformatics students.

Department(s): Dean's Office, College of Biological Science

Location(s): Guelph

BINF*6500 PhD Research Writing in Bioinformatics Summer, Fall, and Winter [1.00]

Background literature pertinent to the student's initial research direction is studied. Starting with a reading list provided by the advisor and the instructor, the student builds on this list and constructs a major literature review over two semesters. As the student begins to generate initial ideas for their own research direction, their ideas for their doctoral research are written and explained. The emphasis is on a sub-field or sub-fields of bioinformatics.

Offering(s): Annually

Restriction(s): Restricted to PhD Bioinformatics students.

Department(s): Dean's Office, College of Biological Science

Location(s): Guelph

BINF*6890 Topics in Bioinformatics Fall Only [0.50]

The course covers a breadth of knowledge of topics in bioinformatics, which may include, but are not limited to, programming languages and development, computing skills applicable to artificial intelligence and machine learning strategies, and multi-OMICs software packages and their applications in diverse biological fields. Additionally, critical thinking, communication, presentation, and collaboration skills are developed and fostered.

Offering(s): Annually

Department(s): Dean's Office, College of Biological Science

Location(s): Guelph

BINF*6970 Statistical Bioinformatics Winter Only [0.50]

This course presents a selection of advanced approaches for the statistical analysis of data that arise in bioinformatics, especially genomic data. A central theme to this course is the modelling of complex, often high-dimensional, data structures.

Offering(s): Annually

Restriction(s): Restricted to Bioinformatics students.

Department(s): Dean's Office, College of Biological Science

Location(s): Guelph

BINF*6999 Bioinformatics Masters Project Summer and Fall Reg Required [1.00]

A major research project and paper is completed and presented by students in the Master of Bioinformatics program. Projects may involve either the development or application of bioinformatics methods. Professionalism and communication skills in written, oral, visual, and computational formats are also emphasized.

Offering(s): Annually

Prerequisite(s): BINF*6110, BINF*6210

Restriction(s): Restricted to Master of Bioinformatics students.

Department(s): Dean's Office, College of Biological Science

Location(s): Guelph