

GLIS 673

BIOINFORMATICS RESOURCES

3 credits; Pre-requisite: GLIS619

Instructor

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Description

Bioinformatics from a library and information science perspective: biological foundation for bioinformatics; bioinformatics information needs and behaviours; information retrieval using key bioinformatics resources; the role of biology, computer science and library and information science; ethics.

Learning Outcomes

By the end of the course, the student should be able to:

1. define bioinformatics and its core elements
2. identify the basic biology and genetics concepts that underpin bioinformatics
3. demonstrate effective information search skills and appropriate selection of resources
4. analyse the role and significance of bioinformatics librarianship/information science in different contexts
5. value and appreciate the role of librarians and significance of information science (as well as other disciplines) within the interdisciplinary field of bioinformatics

Instructional Method

A combination of lectures, guest lecturers, hands-on computer labs, class exercises, and discussion of readings.

Course Material

Readings will be posted to MyCourses on a weekly basis.

Course Content

Topics covered include:

- “Genetics 101” – overview of basic genetics concepts underpinning bioinformatics resources
- Textual information sources (e.g., PubMed, OMIM)
- DNA sequence records and databases
- Protein sequence records and databases
- Similarity searching and analysis (e.g., BLAST)
- Expression databases
- Taxonomies and ontologies (e.g. Gene Ontology)
- Data mining in bioinformatics
- Bioinformatics librarianship and information services
- Ethical issues and genetic information

Assignments and Evaluation

Search/resource assignments	50%	<i>Objectives 2, 3 and 5</i>
Database presentation	20%	<i>Objectives 1, 2, 3, and 5</i>
Term paper	20%	<i>Objectives 1, 4 and 5</i>
Participation	10%	<i>Objectives 1, 2, 3, 4 and 5</i>