

Methods in Bioinformatics

Titulaires

Matthieu DEFRANCE (Coordonnateur) et Wim VRANKEN

Mnémonique du cours

INFO-F439

Crédits ECTS

5 crédits

Langue(s) d'enseignement

Anglais

Période du cours

Deuxième quadrimestre

Campus

Hors campus ULB

Contenu du cours

This course will provide an introduction to computational methods applied to biological questions. After an introduction to the computational biology domain, the notion of sequence alignment, motif discovery, protein structure will be detailed. A particular emphasis will be put on notion related to protein structure prediction and methods related to Next Generation Sequencing data analysis.

Objectifs (et/ou acquis d'apprentissages spécifiques)

This course focusses on computational biology.

The goal of this course is to provide students with the necessary skills i) to understand computational biology research, ii) to grasp the workings of some of the key algorithms that were developed to solve particular problems in molecular biology iii) to understand the role of different computational methods in solving these problems, iv) to know where certain molecular data can be found and how to combine this, v) to be able to develop a project that tries to solve some problem in this domain. In addition, this knowledge will allow you to understand the literature on bioinformatics and computational biology.

Pré-requis et co-requis

Cours co-requis

INFO-F409 | Learning dynamics | 5 crédits, INFO-F422 | Statistical foundations of machine learning | 5 crédits et INFO-H410 | Techniques of artificial intelligence | 5 crédits

Méthodes d'enseignement et activités d'apprentissages

Oral presentations + Assignments.

Références, bibliographie et lectures recommandées

Provided in the slides.

Autres renseignements

Lieu(x) d'enseignement

Hors campus ULB

Contact(s)

Pr. Matthieu Defrance
Département d'Informatique
Université Libre de Bruxelles
Boulevard du Triomphe CP 212
1050 Brussels
Belgium
Tel: 02/650.58.68
Email: matthieu.defrance@ulb.be

Méthode(s) d'évaluation

Autre

Méthode(s) d'évaluation (complément)

During the course sessions, students will receive assignments. These assignments will be graded and the points will be used in the calculation of the final course grade.

For the exam, students will present an article, discussing the context, methods, results and conclusions drawn by the authors.

The quality of the project and the quality of the presentation (together with the points for the assignments) will determine the final points for this course.

Construction de la note (en ce compris, la pondération des notes partielles)

50% on the assignments

50% on the oral presentation

Langue(s) d'évaluation principale(s)

Anglais

Programmes

Programmes proposant ce cours à la faculté des Sciences

MA-BINF | **Master en bioinformatique et modélisation** | finalité Approfondie/bloc 2 et MA-INFO | **Master en sciences informatiques** | finalité Spécialisée/bloc 1 et finalité Spécialisée/bloc 2

Programmes proposant ce cours à l'école polytechnique de Bruxelles

MA-IRIF | **Master : ingénieur civil en informatique** | finalité Spécialisée/bloc 2

