

Programme

Qualification awarded

Bachelor of Science

Length of the programme

48 months

ECTS credits

240

Level of qualification

Bachelor

Mode

-

Language

Dutch, with parts in English

School

Institute for Life Science & Technology

Bio-Informatics

Profile of the programme

No content available

Learning outcomes

Graduates in Bio-informatics are employed as a researcher, developer or scientific programmer to conduct research or software development in the biological and biomedical field. Graduates are analyzing large data sets from high-throughput laboratory research in scientific institutions and in companies in the pharmaceutical, biotechnology, food and plant-breeding industries.

Graduates of the Bachelor of Bioinformatics programme can demonstrate that s/he has achieved the ability to:

Perform research in the Bioinformatics domain which either helps to solve a problem or develop a method, or provides a greater understanding of a subject within his specific working environment, by:

- Translating the research question to a research plan, taking into account the state of the art in the literature, quality and safety aspects, technological possibilities, health, the environment, sustainability and ethics;
- conducting research based on the scientific method;
- implementing software developments through the 'agile' process;
- reporting and presenting research in accordance with the work field standards.

Conduct experiments in the Bioinformatics domain in a way that ensures that demonstrably reliable results are obtained, by:

- Designing, conducting and documenting an experiment, as well as processing and evaluating its outcomes (including statistically);
- designing, implementing and documenting bioinformatics software, selecting an appropriate programming language and verifying the reliability of the software.

Develops, implements and maintains a management system or parts thereof to ensure that the system conforms to the relevant legislation and quality standards and the organization's norms and values.

- Designing, implementing and maintaining a database or other system for biomedical data, with reference to the FAIR principles;
- Managing code in a version management system, documenting it in accordance with the applicable norms and providing access to it based on the FAIR guidelines for third-party use;
- Designing and maintaining a Linux-based computer system appropriate for bioinformatics work to be conducted efficiently.

Provide properly substantiated advice on the design, improvement or use of products, processes and methods and effects profitable transactions involving products or services within the Bioinformatics domain, by

- Advising a client on the approach to bioinformatics research and software development.

The graduate demonstrates various generic competences by:

- taking initiatives to contact colleagues in order to exchange information and communicate conclusions to different levels in the organisation;
- contributing to the guidance and/or development of colleagues;
- showing professional attitude by being a motivated, flexible and valuable colleague;
- interpreting professional and ethical dilemmas and making decisions accordingly;
- critically evaluating own points of view and actions and taking responsibility for them;
- improving his own performance by self-reflection and receiving feedback.

Programme

Bio-Informatics

credits

	60
□ Theme 1 - Order in Chaos	15
▫ BFVP22BIOINFORM - The Bioinformatician	5
▫ BFVP23DNA - From DNA to Protein	5
▫ BFVP22MOLBIOCODE - Molecular Biology in Code	5

□ Theme 2 - Energy management of the cell	15
▫ BFVP22GENEN - Between Genes and Healing	5
▫ BFVP22BIOCHEMIE - Biochemistry in Focus	10
□ Theme 3 - DNA the hard disk of the cell	15
▫ BFVP22SURVIVAL - Survival of the Fittest	5
▫ BFVP22TOOLBOX - The Bioinformatics Toolbox	10
□ Theme 4 - Measuring is Knowing	10
▫ BFVP22CYCLUS - The Scientific Cycle	10
▫ Electives	5
Year 2	60
□ Theme 5 - Genomics practice	15
▫ BFVH23NGS - NGS & Mapping & Genetics	5
▫ BFVH23GENOMICS - Genomics & Transcriptomics	10
□ Theme 6 - BLAST basics	15
▫ BFVH23DATADASH - Data Dashboards	10
▫ BFVH23IMMUNO - Immunology	5
□ Theme 7 - Gene Expression Analysis	15
▫ BFVH23METAGEN - Metagenomics	10
▫ BFVH23MACHINE - Machine Learning with Class(es)	5
□ Theme 8 - Introduction to Systems Biology	15
▫ BFVH23OMICS - Omics	10
▫ Electives	5
Year 3	60
□ Theme 9 - Introduction Machine Learning	15
▫ BFVH3TH9 - Laboratory theme 9	6
▫ BFVH3JAVA - Introduction Java	3
▫ BFVH18IDMN - Introduction to Datamining	3
▫ BFVH19BIN3 - Bio-informatics 3	3
□ Theme 10 - Research web applications	15
▫ BFVH3TH10 - Laboratory theme 10	5
▫ BFVH18GEN2 - Genetics 2	3
▫ BFVH4STA4 - Statistics 4	3
▫ BFVH4WB11 - Web Based Information Systems	3
▫ LSVH7STB3A - Academic Counselling Year 3 - Part 1	1
▫ Electives	30
Year 4	60
□ Practical placement	30
▫ BFVH19STAGE - Practical Learning Period	28
▫ BFVH20DSQC - Data Stewardship & Quality Control	2
□ Final Project	30
▫ BFVH15AFST - Final Project	30

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