

## Programme

### Qualification awarded

Bachelor of Science

### Length of the programme

48 months

### ECTS credits

240

### Level of qualification

Bachelor

### Mode

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### 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
▫ BFVP15PRTH1 - Practical Assignment	4
▫ BFVP3BIO1 - Biology 1	3
▫ BFVP2CHM1 - Chemistry 1	3
▫ BFVP15INF1 - Informatics I	3

▫ LSV15BVVIS - Mathematics basic skills	1
▫ LSV15SVNED - Basic Dutch Skills	0
▫ LSV7STB1A - Academic Counselling/Introduction Term 1	1
▫ Theme 2 - Energy management of the cell	15
▫ BFVP17PRBF2 - Practical Assignment Bioinformatics 2	4
▫ LSV15RAP - Report	1
▫ BFVP3BIO2 - Biology 2	3
▫ BFVP2CHM2 - Chemistry 2	3
▫ BFVP3INF2 - Informatics II	3
▫ LSV7STB1B - Academic Counselling Term 2	1
▫ Theme 3 - DNA the hard disk of the cell	15
▫ BFVP17PRBF3 - Practical Assignment Bioinformatics 3	4
▫ BFVP3BIO3 - Biology 3	3
▫ BFVP17BIN1 - Bio-Informatics 1	3
▫ BFVP3INF3 - Informatics III	3
▫ LSV16PRE - Presentation	1
▫ LSV7STB1C - Academic Counselling Term 3	1
▫ Theme 4 - ?	15
▫ BFVP17PRBF4 - Practical Assignment Bioinformatics 4	4
▫ BFVP4STA1EN2 - Statistics 1 + 2	3
▫ BFVP3BIO4 - Biology 4	3
▫ BFVP17RLX1 - Introduction R + Linux	4
▫ LSV7STB1D - Academic Counselling Term 4	1
Year 2	60
▫ Theme 5 - Genomics practice	15
▫ BFVH3TH5 - Laboratory theme 5	6
▫ BFVH15BCH1 - Biochemistry 1	3
▫ BFVH4DBS1 - Databases 1	3
▫ BFVH18BIN2 - Bio-Informatics 2	3
▫ Theme 6 - BLAST basics	15
▫ BFVH3TH6 - Laboratory theme 6	5
▫ BFVH15BCH2 - Biochemistry 2	3
▫ BFVH3GEN1 - Genetics 1	3
▫ BFVH4DBS2 - Databases 2	3
▫ LSVH7STB2A - Academic Counselling Year 2 - Part 1	1
▫ Theme 7 - Gene Expression Analysis	15
▫ BFVH3TH7 - Laboratory theme 7	6
▫ BFVH4ADS1 - Algorithms & Data Structures	3
▫ BFVH15MBI1 - Microbiology 1	3
▫ BFVH3STA3 - Statistics 3	3
▫ Theme 8 - Introduction to Systems Biology	15
▫ BFVH3TH8 - Laboratory theme 8	5
▫ BFVH3IML1 - Immunology 1	3
▫ BFVH15MBI2 - Microbiology 2	3
▫ BFVH18WIS - Mathematics	3
▫ LSVH7STB2B - Academic Counselling Year 2 - Part 2	1
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
▫ BFVH4WBI1 - 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

