



BACHELOR

**ADVANCED BACHELOR  
OF BIOINFORMATICS**

BECOME THE **LABORATORY**  
**SCIENTIST** OF THE FUTURE

2025 - 2026

**howest**  
university of applied sciences

## » ON THE COVER



### Yana Kellens

I chose Howest because of its innovative approach and cutting-edge campus. Located right next to Bruges station, the campus is both modern and practical, offering state-of-the-art facilities that create the perfect environment for hands-on learning.

Bioinformatics perfectly combines my interests in technology and biological processes. This practical, forward-thinking programme prepares me for a fast-growing field with exciting opportunities in biotech and pharma. What excites me most is solving complex problems and analyzing biological datasets to uncover insights that contribute to research breakthroughs and a healthier future.



## BIOINFORMATICS

### » PERFECT FOR YOU? *Do the check!*

- You are curious about **programming languages** and want to learn how to **process and interpret** biological data.
- You want to **elevate your career in science** and specialize in one of the fastest-growing fields today.
- You want to challenge yourself with an **English programme**.
- You enjoy bridging the gap between **biology and technology**, transforming data into meaningful scientific insights."



### Unlock the power of Bioinformatics

The world of molecular biology is evolving rapidly, mainly due to the increasing importance of Next-Generation Sequencing and big data, alongside traditional research methods. The advanced bachelor's degree in Bioinformatics will arm scientist students with the necessary IT and programming skills to be able to work with these changes and so continue to work in a data driven manner.

Do you have a Bachelor's degree in Biomedical Laboratory Science, or did you graduate from another programme in molecular biology? Then you can specialise with the advanced bachelor of Bioinformatics in the IT and automation fields, which are becoming increasingly important in molecular biology. In this way, you allow yourself to truly keep up with the new developments in your professional sector. Students without prior knowledge of molecular biology can also register for the various course units, via a credit contract.

To challenge yourself, this programme is taught entirely in English. As everything in bioinformatics is found online in English and the communication language in the biotech labs is more and more English, the choice for this language is obvious. Secondly it makes the programme more international and studying in English is one more asset in your personal development.

### Unique training in Flanders

The reason for setting up this unique training course in Flanders is the observation that molecular and biotechnological research no longer focuses only on a single gene or protein, but on **all the genes and proteins** within a cell or organism. Bioinformatics addresses and eliminates the risks of unnecessary experimental data and incomplete processing. The training, therefore, focuses on four aspects.

# » STUDY PROGRAMME 2025-2026

## Daytime programme

SEMESTER 1		SEMESTER 2	
A	B	C	D
BIT 01 Linux operating systems (5 ECTS)	BIT 04 Databases and data management (5 ECTS)	BIT 07 Machine Learning (5 ECTS)	BIT 11 Internship in Belgium or abroad (10 ECTS)
BIT 02 Web technologies (5 ECTS)	BIT 05 Scripting (5 ECTS)	BIT 08 Data analysis, visualization and biostatistics using R (5 ECTS)	
BIT 03 Structural bioinformatics (5 ECTS)	BIT 09 High throughput analysis (5 ECTS)		
	BIT 06 Comparative genomic analysis (5 ECTS)	BIT 10 Systems biology (5 ECTS)	

The first three periods (A, B & C) have 6 weeks of lessons, each followed by exams *Programme is subject to change*

Informatician Programmer Bioinformatician New Young Professional

## Distance learning track (@home)

SEMESTER 1			SEMESTER 2		
BIT 01 Linux operating systems (5 ECTS)	BIT 02 Web technologies (5 ECTS)	BIT 03 Structural bioinformatics (5 ECTS)	BIT 04 Databases and data management (5 ECTS)	BIT 05 Scripting (5 ECTS)	BIT 06 Comparative genomic analysis (5 ECTS)
SEMESTER 3			SEMESTER 4		
BIT 07 Machine Learning (5 ECTS)	BIT 08 Data analysis, visualization and biostatistics using R (5 ECTS)	BIT 09 High throughput analysis (5 ECTS)	BIT 10 Systems biology (5 ECTS)	BIT 11 Internship in Belgium or abroad (10 ECTS)	

Each course unit only has a limited number of contact moments, followed by an exam. *Programme is subject to change*  
The course units are organized sequentially.

Informatician Programmer Bioinformatician New Young Professional

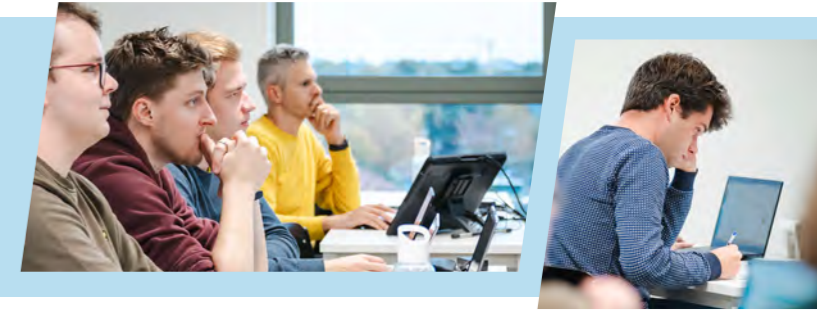
Want to know more about **study credits (ECTS)**? Visit [www.howest.be/studycredits](http://www.howest.be/studycredits)

# » THE 4 ASPECTS of our programme!

## 1 Informatician

The student improves applications by adapting programs and data structures, managing complex biological data with user-friendly database and software structures.

Linux Databases Machine Learning/AI



## 2 Programmer

The student autonomously clarifies and solves a biological problem by selecting a relevant programming language and by applying it efficiently to develop an own program.

Automation Web development Statistics



## 3 Bioinformatician

The student integrates current bioinformatics trends, ethical considerations, software selection, and multidisciplinary skills to solve biological problems effectively.

Algorithms Problem-solving Genomics/proteomics



## 4 New Young Professionals

The student communicates research findings clearly by using technical terminology, collaborating constructively within both intra- and interdisciplinary teams.

Teamwork Communication Reporting





## » JOB OPPORTUNITIES

This bioinformatics programme gives you the **hands-on experience and skills** to get started in the field of bioinformatics. Some alumni choose to combine “**dry lab**” skills with “**wet lab**” skills. In any case, you can be widely employed both within the **private sector and in research or routine laboratories** because of your **newly acquired know-how** in bioinformatics.

The bioinformatics work field is very diverse, from **molecular diagnostics and medical genetics in (hospital) laboratories**, where they increasingly make use of **Next-Generation Sequencing within DNA diagnostics**, to university research groups and private companies within life sciences. Also many pharmaceutical companies are diligently looking for employees with an **R&D background and a good knowledge of biostatistics and data processing**.



## » TESTIMONIALS



**Xander Marclé**  
**Graduated**

Jr. Scientific Programmer, BASF

“As a graduate of Howest Bruges’ Bioinformatics program, I gained invaluable skills in just one year. With a prior degree in Biomedical Sciences, my internship at the Howest Bioinformatics Knowledge Center allowed me to tackle challenging projects with strong lecturer support. The program’s balance between theory and practical skills prepared me for careers in both biotechnology and IT. Now, as a Scientific Programmer at BASF Agricultural Solutions, I apply this knowledge daily and feel confident about future opportunities.”



**Maxine Vanvuchelen**  
**Graduated**

Team lead accuramed

“I have been working as a laboratory technician for three years and wanted to deepen my knowledge, especially in computer science, a field I’ve long been interested in. This advanced bachelor’s program seemed ideal as it connects computer science with the biomedical world, allowing experiments to be designed on the computer rather than just in the lab. After completing this course, I plan to seek new professional opportunities, applying the knowledge I’ve gained, along with self-study.”



**Pieter De Bleser**  
**Work field**

Bioinformatics expert, VIB-UGhent

“Biological experiments are growing, increasing the need for efficient analysis. With the shift from gene-centric to genome-wide studies, the demand for advanced computing and statistics grows. While large-scale experiments become cheaper and faster, result analysis becomes more labor-intensive. Bioinformatics specialists bridge the gap between bioinformatics and traditional biology and biomedical research. Howest plays a key role here, with its unique Bioinformatics bachelor program in Flanders, providing valuable talent for this niche field.”

## » DISCOVER OUR CAMPUSES IN BRUGES

### Vibrant campuses

The campus is located near Bruges' train station and within walking distance of everything the city is so famous for: the Reien, the Grote Markt, the Burg and its many stores, cafes and coffee bars. We combine this ideal accessibility with perfectly equipped classrooms, a family atmosphere and personal guidance. On our campus you will also find a cozy student restaurant with delicious meals, pasta and sandwiches at student-friendly prices.

### Top choice for students!

Bruges has everything you need to make your student life unforgettable. Trendy coffee bars, cosy cafés, charming squares, and a variety of events, there's always something to experience here. The warm and welcoming atmosphere of the city will make you feel at home straight away. What's more, all the key spots are easily accessible on foot or by bike, allowing you to enjoy everything this beautiful city has to offer in no time.



## » WHAT STUDENTS SAY ABOUT HOWEST



### Personal assistance

Our professors are easily accessible and directly approachable. They know you by name, make time for you and coach you through your studies. Don't have the 'right' education, but do have the passion and perseverance? Then we will do everything to make your dream come true. Need additional study coaching? Stuvo is there for you.



### You can be who you are

You do not have to fit into a straitjacket to fit in. We believe in diversity and in the unique talents of each student. It is our mission to develop those with you.



### Practical training

Theory is necessary, but it is only a beginning. That is why you are introduced to practice from the start of your training. Because we integrate workplace learning, you become a young professional ready to start hands-on and step by step. We also provide exciting internships so you can immediately practice what you've learned.



### Smaller class sizes

With manageable class groups, we provide more personalized guidance and interaction with your professors and fellow students. Smaller practice groups are definitely a plus for work lectures and project work.

Visit the campus and get introduced to the field of study  
[www.howest.be/en/come-and-meet-us](http://www.howest.be/en/come-and-meet-us)





## » GO INTERNATIONAL

Every Howest programme is packed with opportunities for **internationalisation**. This gives you the chance to develop your international and intercultural skills. Through a semester abroad or a well-structured internship abroad, you gain a fresh perspective and discover new possibilities.

Such an international experience also brings you new friendships, helps you navigate diversity, and boosts your self-confidence. **Our Howest graduates find that employers are equally enthusiastic about their international experience.** They value the flexibility, entrepreneurial mindset, and independence you develop through these opportunities.

Moreover, Howest is part of **RUN-EU**, a European network that facilitates short exchanges to Spain, Portugal, Finland, the Netherlands, Austria, or Ireland.



Mail International Office for more info via [international.office@howest.be](mailto:international.office@howest.be)

[www.howest.be/go-international](http://www.howest.be/go-international)

[howest\\_international](https://www.instagram.com/howest_international)

### Facts & Figures

  
**30%**  
of Howest students have a foreign experience

  
**116**  
different nationalities

**1.214**  
international students from **116**  
countries



proud member of



## » MORE INSPIRATION

Info days in Bruges, Kortrijk and Oudenaarde



⌚ 10h-16h



⌚ 10h-13h



⌚ 10h-16h



⌚ 10h-16h



⌚ 17h-19h30



more info:  
[howest.be/info-days](http://howest.be/info-days)

## » READY TO ENROLL?

Let's go!

- 1 Register\***  
Made your decision? Then you can proceed to your registration. More info via [howest.be](http://howest.be)
- 2 Entry-level courses**  
Future Howest students can take entry courses to prepare themselves, with basic knowledge and a taste of the programme. The list of courses will be available online starting in April.
- 3 Welcome days**  
During welcome days, you will receive information about your class schedule, regulations, student support, and your Howest email account.
- 4 Start of classes**

Everything for a smooth start!



How to apply as an international student





## » CONSIDERING THIS STUDY?



Get in touch via  
[jasper.decuiper@howest.be](mailto:jasper.decuiper@howest.be)

[www.howest.be/bit](http://www.howest.be/bit)

 [howest\\_bioinformatics](https://www.instagram.com/howest_bioinformatics)

 [howestbe](https://www.tiktok.com/howestbe)

