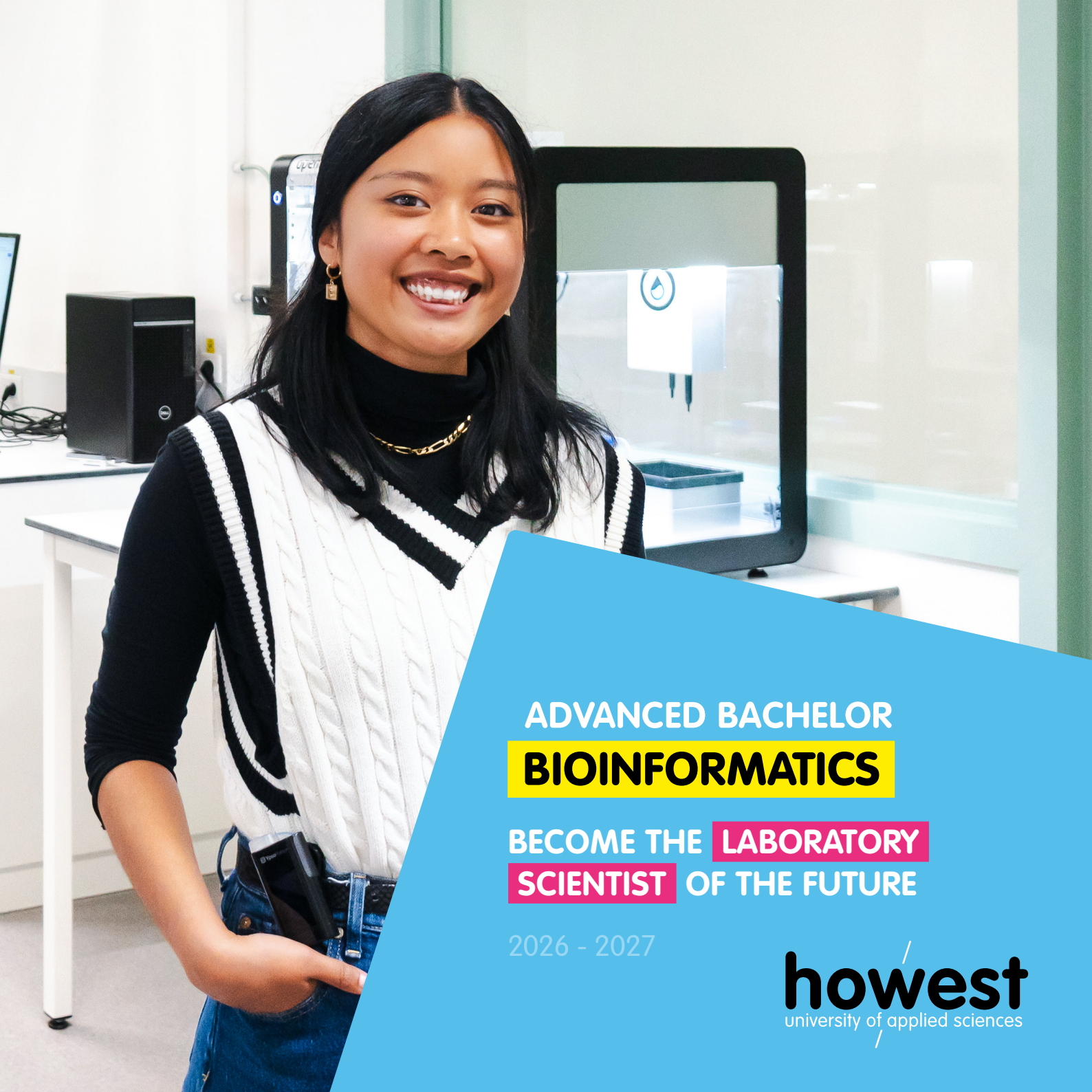




ADVANCED BACHELOR
BIOINFORMATICS

BECOME THE **LABORATORY**
SCIENTIST OF THE FUTURE

2026 - 2027

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 already have a **bachelor's or master's degree in Life Sciences** (and know the basics of molecular biology) **or in IT** (and are familiar with Linux and web technologies).
- 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 enjoy bridging the gap between **biology and technology**, transforming data into meaningful scientific insights.
- You want to enrich your English through an **English-taught programme**.



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. Do you already have a background and degree in IT? Our Bioinformatics for IT Professionals @home track will first immerse you in a solid foundation of molecular biology before introducing you to the exciting world of bioinformatics.

The programme is fully taught in English. While this may be a new experience for some students, it's a valuable one: English is the language of bioinformatics and the international life sciences community, and mastering it will benefit you throughout your professional career.

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 2026-2027

Daytime programme Prefer an on-campus experience? Our daytime programme offers classes during the day at our Howest campus, where you can learn together with your peers and enjoy hands-on guidance from lecturers. More details can be found at www.howest.be/bit.

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 10 Internship in Belgium or abroad (15 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 06 Comparative genomic analysis (5 ECTS)	BIT 09 High throughput analysis (5 ECTS)	

The first three periods (A, B & C) have 6 weeks of lessons, each followed by exams

Programme is subject to change

Distance learning track (@home) Looking for flexibility? The @home track allows you to study remotely at your own pace, supported by online materials, live-streamed sessions, and recordings. This format is ideal for combining your studies with work. More details can be found at www.howest.be/bitathome.

YEAR 1			YEAR 2		
SEMESTER 1 IT Professionals	OR SEMESTER 1 Life Sciences	SEMESTER 2	SEMESTER 3	SEMESTER 4	
BIO 01 Molecular Biology - Basics (5 ECTS)	BIT 01 Linux operating systems (5 ECTS)	BIT 04 Databases and data management (5 ECTS)	BIT 07 Machine Learning (5 ECTS)	BIT 10 Internship in Belgium or abroad (15 ECTS)	
BIO 02 Molecular Biology - Advanced (5 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 03 Structural bioinformatics (5 ECTS)	BIT 06 Comparative genomic analysis (5 ECTS)	BIT 09 High throughput analysis (5 ECTS)		

Each course unit only has a limited number of contact moments, followed by an exam.

Programme is subject to change

- Biology
- Informatics
- Programming
- Bioinformatics
- New Young Professional

 Long-term mobility: within these semesters, you can choose to study abroad or do an internship abroad.

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

» THE 5 ASPECTS of our programme!

1 Informatics

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 Programming

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 Bioinformatics

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 Professional

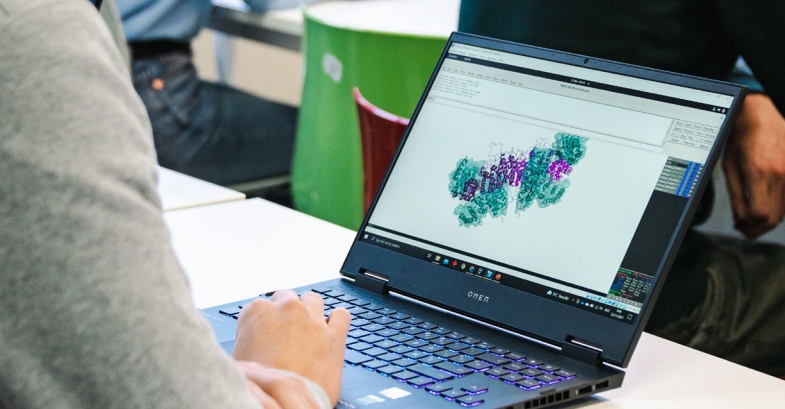
The student communicates research findings clearly by using technical terminology, collaborating constructively within both intra- and interdisciplinary teams.

Teamwork Communication Reporting

5 Biology

For students in the IT Professionals @home track, two introductory molecular biology modules ensure you can successfully transition into the bioinformatics domain.

Fundamentals Cells Biomolecules





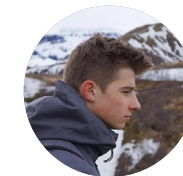
» JOB OPPORTUNITIES

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**.

Beyond the life sciences domain, this bioinformatics programme also opens doors to a wide range of IT-oriented careers. Thanks to your **strong foundation in programming, databases, data analysis and computational thinking**, you can evolve into roles such as data engineer, software developer or IT consultant, whether within life-science companies or in the broader tech sector.

» 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 cozy student restaurants 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.



Warm community

At Howest, you become part of a close-knit class group where everyone knows one another. The atmosphere is warm and supportive, helping you feel at home quickly. There is time for personal guidance and plenty of room for interaction and collaboration among students. This way, you get the chance to become the best version of yourself in a familiar and safe environment.

Visit the campus and get introduced to the field of study
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 of ten universities from nine countries that facilitates short exchanges to Finland, Ireland, the Netherlands, Austria, Portugal, Romania, Spain or the Czech Republic.



Mail International Office for more info via **international.office@howest.be**

www.howest.be/go-international

howest_international

Facts & Figures


30%
of Howest students have a foreign experience


1.537
international students


117
different nationalities

proud member of  **REGIONAL UNIVERSITY NETWORK**
EUROPEAN UNIVERSITY

» 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

» READY TO ENROLL?

Let's go!

- 1 Register***
Made your decision? Then you can proceed to your registration. More info via 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
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www.howest.be/bit
www.howest.be/bitathome

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

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

