ABSALON
UNIVERSITY
COLLEGE
ABSALON

Bachelor of Engineering in Biotechnology

A 3½ year bachelor programme in close collaboration with biotech companies in and around the city of Kalundborg, known as Denmark's Biotech City.

phabsalon.dk/engineering

An education for the future

The Bachelor of Engineering in Biotechnology will teach you how to apply your learning to solve technological problems.You will gain knowledge in chemistry, biotechnology, mathematics and technological processes. This can be applied, for example, in the production of medicines, food, enzymes and materials. An example of a relevant process is fermentation using yeast to produce insulin.Other biotechnological processes that you will learn about include the purification of wastewater and transformation of waste into sustainable products or energy.

Projects that take us from theory to practice
From the very first semester parts of the degree programme will be project-based, teaching you how to work with and think in terms of projects. Learning to work in projects is completely essential for almost all engineering jobs. Through projects you will learn to think in terms of concrete technological and practical solutions based on the syllabus's theory.

The project-based teaching will ensure that after each project you have stronger interdisciplinary competencies that fall outside the traditional engineering competencies in mathematics, technology and science:

- Collaboration
- Communication, e.g. in the form of project reports or presentations
- Project organisation and management
- Planning and resource management (budget, etc.)
- Quality assurance, quality control and risk analysis
- Literature searching

Why study biotechnology in Kalundborg, Denmark's Biotech City?

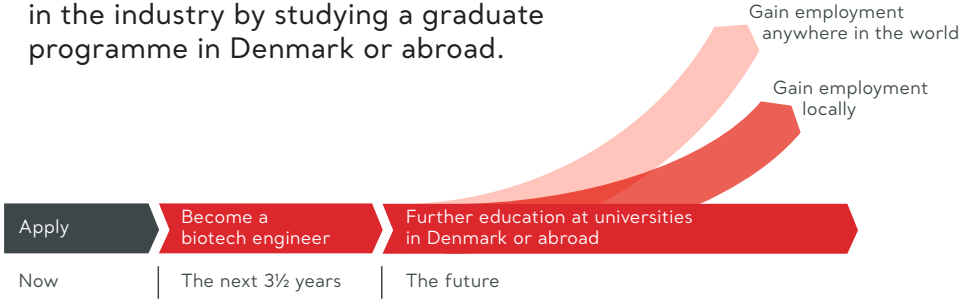
Several of the world's leading biotech companies are located in and around Kalundborg.

This obviously attracts talented and competent employees from all over the world. It also makes sense to study for biotechnology at a university college located very close to the industry you will seek employment in after you graduate.

This very close collaboration between education and industry makes the biotechnology programme at University College Absalon completely unique.
Several of your lecturers have personally worked in major Danish and international biotech companies and you will also participate in guest lectures given by engineers who currently work in the business. This means that as a student you will have access to the latest theory and practical knowledge.

In addition, you will have excellent opportunities to find a student job and internship in some of the world's leading biotech companies during your studies in Kalundborg, Denmark's Biotech City.

Start working or continue your studies?
After 3½ years, having gained your bachelor degree, you will be ready to work immediately in the world's leading biotech companies. But you can also choose to continue with your studies or return to your studies after several years in the industry by studying a graduate programme in Denmark or abroad.



Admission requirements and enrolment

Admission requirements for international students include one of the following certificates:

- A Danish upper secondary school leaving certificate (STX, HF, HHX, HTX, EUX, GIF)
- The Danish/French Baccalauréat (DFB)
- The European Baccalaureate (EB)
- The International Baccalaureate (IB)
- The Option Internationale du Baccalauréat (OIB)
- Another foreign qualifying examination certificate that can be equated with a Danish upper secondary school leaving certificate.

With:

- Mathematics: corresponding to Danish A-level
- Physics: corresponding to Danish B-level or Geoscience corresponding to Danish A-level
- Chemistry: corresponding to Danish B-level or Biotechnology corresponding to Danish A-level
- English corresponding to Danish B-level - with a minimum grade of 3,0 on the Danish grading scale.

If you do not have a qualifying exam with the required English level, you can fulfill it by passing and completing one of the following international English tests:
TOEFL with a minimum score of 83
IELTS with a minimum score of 6,5

Read more about document fulfillment of the specific admission requirements, English language entry requirements and additional qualifications on phabsalon.dk/engineering and feel free to contact us directly: admission@pha.dk

Nice to know

Tuition fee
If you are a citizen of an EU/EEA country you do not have to pay tuition fee for full degree studies. If you are a citizen in a country outside the EU you have to pay a tuition fee before the start of every semester. See the current prices on our website.

International opportunities
Absalon has international partnerships that give students the possibility for an international exchange. Students can go abroad for a semester to study (recommended at semester 5) or do their internship abroad during semester 6.

Accomodation
The Municipality of Kalundborg guarantees accommodation for students. This guarantee ensures you a 'roof over your head' at the start of the semester. In this way you can focus on a good start at studying in Kalundborg. Contact The Settlement Team by e-mail moveto@kalundborg.dk

In 2020 a new student residence has opened in Kalundborg offering brand-new housing for students. Read more and see the pictures here: kalundborgkollegiet.dk/en

Are you ready to study a Bachelor of Engineering in Biotechnology?

Everyone involved in the biotechnology programme at University College Absalon takes it for granted that you think chemistry and biotechnology are exciting and fun subjects. But studying for the degree takes more than that. Do the following descriptions also apply to you?

- **You think mathematics is exciting.** Mathematics is a big part of the degree and this means that you will need to use all of the mathematics that you learn in several courses and throughout the degree.
- **You want to learn to program.** We use various software programs already during the first semester. We do not expect you to be able to program in the beginning but you must be prepared to learn a new 'language' both vocationally and technically.
- **You are ready to become part of an international study environment** At Campus Kalundborg, you will become part of an international study environment, with fellow students from more than 20 different countries, where the majority speak and write English as a second language. This provides you with excellent opportunities to develop a strong international network. But it also requires that you ensure you are engaged in your studies, both socially and academically.
- **You are ready to spend many hours on your studies and in your projects groups.** Studying biotechnology is a fulltime occupation. At University College Absalon you are therefore expected to spend at least 41 hours a week studying. Your time will be occupied by study activities, preparation, project work, laboratory work and company visits.
- **You value a high level of subject knowledge and practical problem solving.** We expect that you are thorough, quality-conscious, immerse yourself in the details and work hard to achieve your goals.
- **You want to be tomorrow's problem solver.** You want to study a programme where you will work actively in engineering projects that are closely linked with the biotechnological production industry, supplying solutions for industries that include pharmaceuticals, food and sustainable energy.

Yasemin Ozboluk

Process Engineer
at Novozymes

"We manufacture around the clock and if the wrong temperature or unwanted pH value occurs, which can ruin the product, I have to decide quickly what we can do to get things back on track. The product is first tested in the laboratory but out in actual production, things may turn out differently and we have to change course but we don't let it get the better of us. It's a responsibility that obligates us."

Yasemin Ozboluk is a bachelor of engineering and after completing her studies joined the enzyme company Novozymes as a process engineer. Among other things, she has been jointly responsible for finding a natural solution that helps breeders to rear poultry that is healthier, absorbs nutrients better and grows more efficiently. This is just one of many Novozyme initiatives and Yasemin is proud to be a part of a company that helps to feed the world in an efficient and sustainable way.

Yasemin wants to use her acquired competencies in a management career and has been offered a position as team leader at Novozymes' Enzyme Analytical Laboratory, with responsibility for a team that works with the making of solvents for analyses using robots.

Example of a typical week in the programme

- Lectures or calculations on campus
- Independent study, group work and/or project work

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
08:00 - 08:40	Breakfast						
08:40 - 09:25	Mathematics 1	Mathematics 1		STUDENT CAFÉ	General and Organic Chemistry	Part-time job	
09:30 - 10:15							
10:25 - 11:10		Project work			Project 1 Industrial Biotechnology		
11:15 - 12:00							
12:00 - 13:00	Lunch						
13:00 - 13:45	General and Organic Chemistry	General and Organic Chemistry	General and Organic Chemistry Laboratory	Project 1 Industrial Biotechnology	Mathematics 1		
13:50 - 14:35							
14:45 - 15:30	Project 1 Industrial Biotechnology	Part-time job			Friday afternoon social get-together		
15:35 - 16:20							
16:20 - 17:00	Project work						Deliver mathematics assignment Deliver chemistry assignment See video for mathematics
17:00 - 18:00							
18:00 - 19:00	Dinner						
19:00 - 22:00	Carry out mathematics assignments	Read exercise guidance. Carry out exercise calculations	Write a laboratory report together with my group	Read two chapters of general and organic chemistry			

Semester overview

7th semester	 Bachelor Project																			Elective							Elective	
6th semester	 Engineering Internship																											
5th semester	 **Project 4** Downstream processing									QA/QC					Practical Control and Instrumentation					Elective							Elective	
4th semester	 **Project 3** Fermentation														Analytical Chemistry 1												Mathematical Modelling	
3rd semester	Molecular Biology 1									Enzyme Biology					Chemical Unit Operations												Chemical Engineering	
2nd semester	 **Project 2** Applied Microbiology					Microbiology									Biochemistry					Physical Chemistry							Statistics	
1st semester	 **Project 1** Industrial Biotechnology									General and Organic Chemistry										Mathematics 1								
ECTS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

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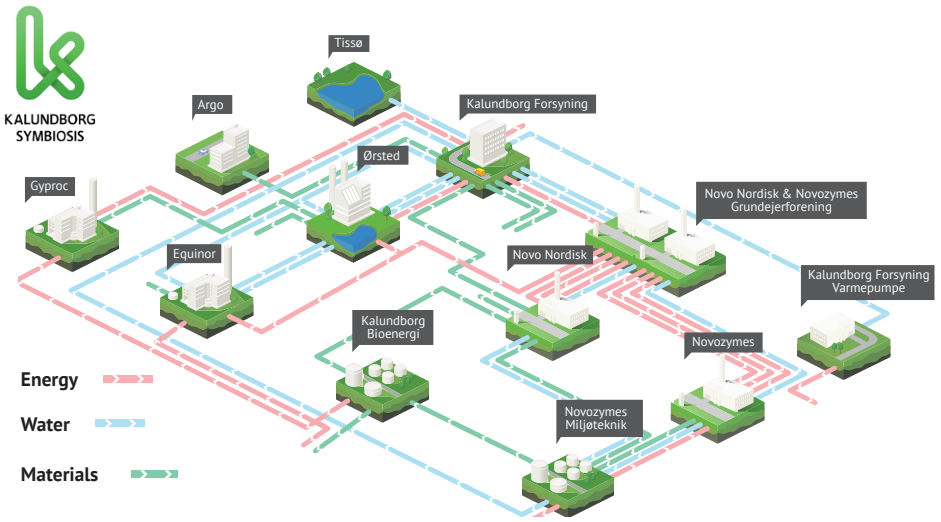
BIOTEKBYEN
KALUNDBORG

One of the world's best biotech cities

Kalundborg is the location for the world's largest insulin factory, the world's largest enzyme production facility and Denmark's largest refinery. At the same time, public and private companies together have developed the world's first industrial symbiosis with a circular approach to production. The main principle is quite simple – that a waste stream from one company becomes a resource in another company, for the benefit of the environment and the economy.



A Biotech City on your doorstep

Below are some examples of the companies that you will meet during your studies:

emendo CONSULTING GROUP
equinor
KALUNDBORG FORSYNING
DYREHØJ VINGAARD
KALUNDBORG SYMBIOSIS
Lundbeck
Petersen & Sønner MJÖD
FermHub ZEALAND
MUSICON Mikrobryggeri
Poul Johansen Maskiner
novozymes Rethink Tomorrow
Norconsult
nne Focused pharma engineering
unibio
Ørsted
NOV Completion & Production Solutions
novo nordisk

Student life at Campus Kalundborg

In Kalundborg you will be part of a close and highly dedicated student environment, where everyone knows eachother and where we spend a great deal of time together when immersing ourselves in our studies as well as in social settings.

It is important for us that you always feel welcome and know that you can hang out at our student lounge, e.g. when doing group work late at night, chatting with friends, playing games on the PlayStation, playing table tennis or board games. You are part of an international student environment with fellow students who have travelled from all over the world to take their degrees and this helps to create a great social environment where we look after each other and constantly learn more about ourselves and each other's culture.

Together with an engaged student council, which you can also join, we ensure Friday afternoon social get-togethers are fun and lively, organise bowling trips and semester parties, summer social events and Easter and Christmas parties, where we for example, bring our own prepared dishes to the buffet, so there is food from many nationalities.

Our completely new campus will open in 2021, right next to the major biotech companies opposite the Biomanufacturing Project House and within walking distance of the train station Kalundborg East, Denmark's Biotech City.

Our location

Campus Kalundborg
J. Hagemann-Petersens Allé 4
4400 Kalundborg, Denmark
E-mail: bioteknologi@pha.dk
Tel.: +45 7248 2000

Come and meet us

Open Days

We have Open Days and/or online events several times a year. Visit/ join us and learn more about the programme, meet students and perhaps enjoy a guided tour of the campus.
To see when the next event will take place, go to our webpage.

Be a student for a day

Contact a student and ask them anything you think is relevant and if you wish, book a day when you can visit and be a student for a day.

University College Absalon
phabsalon.dk/engineering

@BiotechDK

@AbsalonEngineering

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