BUSINESS ACADEMY AARHUS
SCHOOL OF APPLIED SCIENCES

CURRICULUM

for

Chemical and Biotechnical Technology and Food Technology

(Bachelor's top-up)

Institutional part

Commencement 10 August 2020

Content

This curriculum must be used in combination with the national part of the curriculum (called the national part). The national part of the curriculum is the same for all academies that offer this programme, while this institutional part of the curriculum (the institutional part) is specific to Business Academy Aarhus.

1. Overview of elective elements on the programme

Semester	Subject elements	ECTS
1st semester National subject elements	Applied mathematics and physical chemistry	5
	Applied statistics and planning of experiments	5
	Communication and philosophy of science	5
	Production and quality control	5
	Design of experiments	5
	Commerce	5
2nd semester National study programme subject elements	Study programme Chemical and Biotechnical Technology: Organic chemistry Cell biology *or* Study programme Food Technology Food safety and legislation Food quality and quality measurements	 5 5 5 5
2nd semester Institutional study programme subject elements	Study programme Chemical and Biotechnical Technology: Bioproduction Analysis of biomolecules Chemical analysis technique *or* Study programme Food Technology: Food Microbiology Food Technology I Food Technology II	 5 5 5 5 5 5
2nd semester Institutional subject element: Elective element	Study programme Chemical and Biotechnical Technology: Chemical and Biotechnical Technology, choose between several subjects *or* Study programme Food Technology Innovation and product development, can choose among several different subjects	5 5
3rd semester	Internship	15
3rd semester	Bachelor Project	15

2. Institutional subject elements

On this programme there are institutional subject elements which are weighted 20 ECTS, of which 5 ECTS are electives.

Students may also follow electives at other institutions if they pay for their own transportation, overnight accommodation, etc.

2.1 Bioproduction – study programme Chemical and Biotechnical Technology

Content
This subject element deals with fermentation methods as well as the control and regulation of the production process, organism types, including genetically modified organisms, types of products and their use. In addition, upstream processes and downstream processes, as well as environmental aspects concerning the use of GMOs for bioproduction will be included.

Learning objectives

Knowledge
The student will gain knowledge about:

- fermentation methods, production organisms and product types
- and an understanding of and can reflect on up and downstream processes in bioproduction
- and understand the potential environmental risks associated with the use of GMOs.

Skills
The student will get the skills to:

- analyse and evaluate practice-orientated problem statements within the production of biomolecules using micro-organisms and cell cultures
- establish and justify proposals for the solution of problem statements in relation to bioproduction
- disseminate proposals for the development and optimisation of bioproduction.

Competencies
The student will learn to:

- participate in academic and interdisciplinary partnerships to solve problem statements within the production of biomolecules.

ECTS weight
The subject bioproduction is weighted 5 ECTS credits.

2.2 Analysis of biomolecules - study programme Chemical and Biotechnical Technology

Content
The subject element deals with the manufacturing of recombinant proteins, techniques of purification and characterisation of DNA, RNA and protein, including PCR, probing/hybridisation, electrophoresis, sequencing as well as enzyme-based assays for the detection of biomolecules. In addition, antigen-antibody reactions, DNA-chip technology as well as molecular methods for the screening of diseases and molecular biological methods in forensic genetics are also included.

Learning objectives for the analysis of biomolecules

Knowledge
The student will gain knowledge about:

- and an understanding of the theoretical background for methods of analysis of biomolecules
- and can reflect on the application of biotechnology and molecular biological analysis methods, including possible ethical issues in relation to the use of genetically-based analytical methods.

Skills
The student will get the skills to:

- master the assessment of analytical results
- justify and choose and quality assure the biotechnological and molecular techniques for the analysis of biomolecules
- disseminate the results of biotechnological and molecular biological analyses.

Competencies
The student will learn to:

- participate in academic and interdisciplinary cooperation concerning the field of biotechnology and molecular techniques in relation to analysis and development work.

ECTS weight
The subject element analysis of biomolecules is weighted 5 ECTS.

2.3 Chemical analysis technique – study programme Chemical and Biotechnical Technology

Content
The subject element deals with separation methods, including sample preparation, extraction, liquid chromatography, gas chromatography and detection methods, including UV-VIS spectrophotometry, fluorometry, mass spectrometry (MS) atomic absorption spectrophotometry, inductively coupled plasma (ICP), infrared spectrophotometry (IR) and nuclear magnetic resonance spectroscopy (NMR). It also includes qualitative and quantitative analysis, calibration methods and parameters and concepts and terms to describe the suitability of analytical methods. Procedures for systematic method development and optimisation will be a recurrent theme

Learning objectives for chemical analysis technique

Knowledge
The student will gain knowledge about:

- and understand principles and apparatus construction, application areas and sources of error with a broad range of analytical chemical methods
- and an understanding of the common terminology within the selected methods for the purpose of report writing and reading of literature.

Skills
The student will get the skills to:

- disseminate analysis results in a clear and terminologically correct way
- analyse and evaluate the results of the qualitative and/or quantitative analyses in connection with selected methods as well as evaluate and justify the choice of method
- interpret experimental analytical data, including evaluating and justifying the reliability of data and draw appropriate conclusions.

Competencies
The student will learn to:

- participate in academic and interdisciplinary partnerships to solve problem statements within chemical analysis technique
- identify their own learning needs and develop their own knowledge within chemical analysis technique

ECTS weight
The national subject element chemical analysis technique is weighted 5 ECTS.

2.4 Chemical and Biotechnical Technology – Elective – study programme Chemical and Biotechnical Technology

Content
The subject element deals with the following elements, of which the students choose a topic: A validation/verification of analysis directions, preparation of an analysis method, organic or inorganic synthesis, quantification/qualification using techniques from the subject chemical analysis technique.

Learning objectives

Knowledge
The student will gain knowledge about:

- experimental planning in practice
- and an understanding of and can reflect on the design of experiments in practice.

Skills
The student will get the skills to:

- collect the necessary knowledge for the establishment of an experimental plan
- outline a hypothesis as well as evaluate and draw conclusions from the results obtained in practice
- communicate experiment results and relate/compare to others' work.

Competencies
The student will learn to:

- independently or in cooperation with others, be responsible for the practical planning and execution of laboratory work
- identify their own learning needs and develop new knowledge about the planning of experiments within Chemical and Biotechnical Technology.

ECTS weight
The subject element Chemical and Biotechnical Technology – Elective is weighted 5 ECTS credits.

2.5 Food microbiology – study programme Food Technology

Content
The subject element deals with microbial presence in foods, including bacteria, yeast, moulds, viruses and parasites, food-borne pathogens: pathological pictures, resistance, frequency, spread, epidemiology, outbreak investigation, speciation etc. In addition, microbiological analysis methods, applications and requirements for indicator organisms, as well as an assessment of the total bacterial count will be included.

Learning objectives for Food Microbiology

Knowledge
The student will gain knowledge about:

- foodborne diseases and epidemiological aspects
- the validation of new methods of analysis, including analytical parameters as well as sensitivity and specificity
- and an understanding of and can reflect on the importance of the use of indicator microorganisms.

Skills
The student will get the skills to:

- assess how the growth of undesirable micro-organisms can be controlled as well as assess the microbiological analysis methods with regard to, among other things, costs, time consumption and response time
- select and apply microbiological methods for the assessment of food quality, as well as evaluate food products based on microbiological criteria
- communicate knowledge about the assessment of food products in relation to microbiology.

Competencies
The student will learn to:

- acquire knowledge about new methods for microbiological assessment of food products and participate in incorporating these into a laboratory.

ECTS weight
The subject food microbiology is weighted 5 ECTS credits.

2.6 Food Technology I – study programme Food Technology

Content
The subject element deals with unit operations, including heat treatment, drying, cooling/freezing, irradiation, separation processes and mixing. In addition, processing influences on nutritional content, packaging and packaging gases as well as the food products' manufacturing technology related to the functional quality is included.

Learning objectives for Food Technology I

Knowledge
The student will gain knowledge about:

- equipment, respectively concerning heat treatment, drying, cooling/freezing and irradiation
- separation processes and mixing
- and an understanding of and can reflect on the theory behind the selected food product technological processes
- packaging and packaging gases
- the theory behind the various food groups in manufacturing technology.

Skills
The student will get the skills to:

- master food product's technological unit operations
- evaluate the changes that food components undergo during processing
- communicate with others in the organisation about issues within processing
- evaluate any possible influence processing has on food properties.

Competencies
The student will learn to:

- handle issues in the choice of process equipment for the manufacture of various food products.

ECTS weight
The subject Food Technology I is weighted 5 ECTS credits.

2.7 Food Technology II – study programme Food Technology

Content
The subject element deals with additives (including stabilisers, emulsifiers, preservatives, dyes and flavourings and enzymes). In addition, it includes fermentation/positive microbiology.

Learning objectives for Food Technology II

Knowledge
The student will gain knowledge about:

- and an understanding of the possibilities for the use of additives
- the theory behind fermentation
- and an understanding of and can reflect on modern technologies for the production of foods.

Skills
The student will get the skills to:

- evaluate the properties of emulsifiers, stabilisers, preservatives, dyes, flavourings and aromatic substances and enzymes
- justify the development of fermentation, as well as the conditions which may affect the fermentation
- apply selected additives in practice.

Competencies
The student will learn to:

- handle issues in the choice of additives
- evaluate the impact of changes in physical/chemical conditions in a fermentation
- evaluate problem statements from scientific articles, as well as select and justify appropriate solution models

ECTS weight
The subject Food Technology II is weighted 5 ECTS credits.

2.8 Innovation and product development – Elective – study programme Food Technology

Content
The subject element deals with innovation as well as a product's life cycle, including new knowledge, laws and labelling in relation to new production and new products. Project management of innovative processes, economic considerations as well as methods for the identification of trends in the future of food products are also included.

Learning objectives for Innovation and product development

Knowledge
The student will gain knowledge about:

- and understand innovative concepts
- the principles, which enable the inclusion of results from market and consumer analyses in the innovation process
- patenting (introduction level).

Skills
The student will get the skills to:

- apply innovative techniques/methods associated with the processes of idea generation and idea development, concept development and product development
- disseminate their academic expertise throughout the organisation
- apply theoretical knowledge about innovative concepts in a process-orientated procedure 'from idea to product'
- make relevant information searches regarding legislation and labelling.

Competencies
The student will learn to:

- manage innovative work across academic disciplines
- deal with issues that are related to idea generation and idea development, concept development and product development.

ECTS weight
The subject element innovation and product development is weighted 5 ECTS credits.

3. Exams on the programme

When starting on a subject element, semester, etc., the students will automatically be registered for the relevant exams. Registration for an exam means that one exam attempt has been used. This does not apply for students who are unable to attend the examination due to a documented illness or maternity/paternity leave.

It is always the responsibility of the student to ensure that they have internet access during the exam and that their computer is functional.

All written contributions must be credible and handed-in on time.

3.1 Overview of examinations and their timing

Below is an overview of the programme's exams:

Time	Exams	ECTS	Internal/external assessment	Assessment
1st semester	*National subject element:* Applied mathematics and physical chemistry	5	Internal	7-point scale
1st semester	*National subject element:* Applied statistics and planning of experiments	5	Internal	7-point scale
1st semester	*National subject element:* Communication and philosophy of science	5	Internal	7-point scale
1st semester	*National subject element:* Production and quality control	5	Internal	7-point scale
1st semester	*National subject element:* Design of experiments	5	Internal	7-point scale
1st semester	*National subject element:* Commerce	5	Internal	7-point scale

2nd semester Study programme Chemical and Biotechnical Technology	Biotechnology: *National subject element:* Cell biology *Institutional subject elements:* Bioproduction Analysis of biomolecules	15	External	7-point scale
2nd semester Study programme Chemical and Biotechnical Technology	Chemical technology: *National subject element:* Organic chemistry *Institutional subject elements:* Chemical analysis technique Chemical and Biotechnical Technology - Elective	15	External	7-point scale
2nd semester Study programme Food Technology	Food quality: *National subject elements:* Food quality and quality measurements Food safety and legislation *Institutional subject element:* Food Microbiology	15	External	7-point scale
2nd semester Study programme Food Technology	Food Technology: *Institutional subject elements:* Food Technology I Food Technology II Innovative technology and product development - Elective	15	External	7-point scale
3rd semester	Internship exam	15	Internal	7-point scale
3rd semester	Bachelor Project	15	External	7-point scale

Information concerning times, dates and locations for the exams can be found on Study Update

All exams are held in English. For all international programmes, all exams are conducted in English.

3.2 Completion of the exams

In general, the following applies for all programmes in relation to when an exam has been completed or an exam attempt has been used. If there are deviations for a specific exam, they will appear in the individual exam descriptions below.

Pass / fail exams

If a student has not achieved the mark 02 or higher for an oral or written exam or a combination of this, the exam will not be passed and one exam attempt will have been used.

If exam report is prepared by one student and not passed, the student can choose to work further on the existing report or prepare a new report.

In the event of one student, as part of a group project, not achieving the mark 02 or above, the student can rewrite their section of the joint report, provided the exam is individualised. The student can also choose to write a new report alone, where the rules for the scope and guidelines for individually produced reports apply.

Report not handed in/written answers

If a student does not hand-in their exam report or a written report, one exam attempt will have been used.

The student can choose to work further on their existing report or prepare a new report for the re-exam.

Not participated in the exam/oral examination

If a student hands in their exam report or written answers, but doesn't participate in the oral exam, one exam attempt will have been used.

A new oral exam will be scheduled as soon as possible and the student will be examined in the previously handed in report/written answers.

Illness and re-examinations

The specific deadlines and dates will be communicated to students via Study Update along with the deadlines and dates for the ordinary exam.

Information about the time and place of illness/re-exams can be found on Study Update. This may be the same as the next regular exam. The student is responsible for finding out when the illness and re-exams take place. The student is automatically registered the next illness/re-exam. If the offered illness/re-exam is not used, one exam attempt will have been used.

Illness Exam

A student who has been prevented from taking an examination due to a documented illness or another unforeseen circumstance will be given the opportunity to take a (illness) exam as soon as possible. If it is an exam that is scheduled in the programme's last examination period, the student will be given the opportunity to retake the exam in the same examination period or as soon as possible after.

The illness must be documented by a doctor's certificate. The Academy must receive the doctor's certificate no later than three working days after the examination. Students who become acutely ill during an exam must prove that they have been ill on that day.

If the illness is not documented according to the above rules, the student will have used one examination attempt. The student must pay the cost of the doctor's certificate. Requirements for the doctor's certificate can be found on Study Update under 'Worth knowing about exams'.

Re-examination

With a failed exam, or failure to appear for an exam, the student is automatically registered for the re-examination, provided that the student has an exam attempt left. The student is registered to take the exam the next time it is scheduled. The re-examination may be the same as the next regular exam.

The programme may grant an exemption from the automatic registration to an exam provided this is justified by exceptional circumstances, including documented disabilities.

3.3 Applied mathematics and physical chemistry - 1st semester - 5 ECTS

Learning objectives for the exam

The learning objectives for this exam are the same as the learning objectives for subject element applied mathematics and physical chemistry. The learning objectives are specified in the national part of the curriculum.

Exam form and organisation

The exam is an individual, written exam. Duration 3 hours

Prerequisites to take the exam

A prerequisite to take the exam is the fulfilment of the obligation to participate in classes as described in section 13.

Assessment criteria

The exam is assessed according to the 7-point scale and has an internal co- examiner.

3.4 Applied statistics and planning of experiments - 1st semester - 5 ECTS

Learning objectives for the exam

The learning objectives for this exam are the same as the learning objectives for subject applied statistics and planning of experiments. The learning objectives are specified in the national part of the curriculum.

Exam form and organisation

The exam is an individual, written exam. Duration 3 hours.

Prerequisites to take the exam
A prerequisite to take the exam is the fulfilment of the obligation to participate in classes as described in section 13.

Assessment criteria
The exam is assessed according to the 7-point scale and has an internal co- examiner.

3.5 Communication and philosophy of science - 1st semester - 5 ECTS

Learning objectives for the exam
The learning objectives for this exam are the same as the learning objectives for the subject communication and philosophy of science. The learning objectives are specified in the national part of the curriculum.

Exam form and organisation
The examination form is an individual written synopsis (max 2 pages, excluding references) on the ethical analysis of an ethical dilemma, as well as an individual oral presentation and examination. The duration of the oral examination is 20 minutes, divided according to: presentation 5-10 min, exam 5-10 min and discussion of marks 5 min.

Prerequisites to take the exam
In order to take the oral part of the exam, the synopsis must be handed-in and the obligation to participate in classes must be met as described in section 13.

Assessment criteria
The synopsis, oral presentation and exam are the basis of the assessment. The exam is assessed as a whole according to the 7-point scale and has an internal co-examiner.

3.6 Production and quality control - 1st semester - 5 ECTS

Learning objectives for the exam
The learning objectives for this exam are the same as the learning objectives for the subject production and quality control. The learning objectives are specified in the national part of the curriculum

Exam form and organisation
The exam is a written exam. Duration 4 hours.

Prerequisites to take the exam
A prerequisite to take the exam is the fulfilment of the obligation to participate in classes as described in section 13.

Assessment criteria
The exam is assessed according to the 7-point scale and has an internal co- examiner.

3.7 Commerce – 1st semester – 5 ECTS

Learning objectives for the exam

The learning objectives for this exam are the same as the learning objectives for the subject commerce. The learning objectives are specified in the national part of the curriculum.

Exam form and organisation

The exam is an individual oral examination on the basis of a report prepared in groups (2 to 3 students), with a maximum of 5 standard pages/student. The duration of the oral examination is 25 minutes, divided according to: presentation 5-10 min, exam 10-15 min and discussion of marks 5 min

Prerequisites to take the exam

In order to take the oral part of the exam, the report must be handed-in and the obligation to participate in classes must be met as described in section 13.

Assessment criteria

The basis of assessment is the individual oral presentation and as well as the exam. The exam is assessed as a whole according to the 7-point scale and has an internal co-examiner.

3.8 Design of experiments - 1st semester - 5 ECTS

Learning objectives for the exam

The learning objectives for this exam are the same as the learning objectives for subject design of experiments. The learning objectives are specified in the national part of the curriculum.

Exam form and organisation

The exam is a written task prepared in groups (max 5 students) with a subsequent individual oral examination. The written task will be allocated by drawing lots. Preparation time 2 days/48 hours. The duration of the oral examination is 25 minutes, divided according to: presentation 5-10 min, exam 5-10 min and discussion of marks 5 min.

Prerequisites to take the exam

In order to take the oral part of the exam, the written task must be handed-in and the obligation to participate in classes must be met as described in section 13.

Assessment criteria

The assessment includes the written group task and the individual oral presentation as well as the examination which is based on the group task. The oral and the written part are weighted equally. The exam is assessed according to the 7-point scale and has an internal co- examiner.

3.9 Biotechnology – 2nd semester – 15 ECTS

Learning objectives for the exam

The learning objectives for the exam are equal to the learning objectives for subject elements cell biology, bioproduction and analysis of biomolecules. The learning objectives are specified in the national and the institutional part of the curriculum

Exam form and organisation

The exam is an oral examination based on a task which is assigned on the basis of a draw. Preparation time 2 days/48 hours. The duration of the oral examination is 30 minutes, divided according to: presentation 10-15 min, exam 10-15 min and discussion of marks 5 min.

Prerequisites to take the exam

A prerequisite to take the exam is the fulfilment of the obligation to participate in classes as described in section 13.

Assessment criteria

The assessment criteria consist of the oral presentation and the exam. The exam is assessed as a whole according to the 7-point scale and has an external co-examiner.

If the subjects are not completed in the same examination period, the individual subjects can be examined separately.

3.10 Chemical technology – 2nd semester – 15 ECTS

Learning objectives for the exam

The learning objectives for the exam are the same as the learning objectives for the subject elements organic chemistry, chemical analysis techniques as well as elective chemical and biotechnical technology. The learning objectives are specified in the national and the institutional part of the curriculum

Exam form and organisation

The exam is an individual oral examination based on a task which is assigned on the basis of a draw. Preparation time is 2 days/48 hours. The exam lasts 30 min and is divided according to: presentation 10-15 min, exam 10-15 min and discussion of marks 5 min.

Prerequisites to take the exam

A prerequisite to take the exam is the fulfilment of the obligation to participate in classes as described in section 13.

Assessment criteria

The assessment criteria consist of the presentation and the exam. The exam is assessed as a whole according to the 7-point scale and has an external co-examiner.

If the subjects are not completed in the same examination period, the individual subjects can be examined separately.

3.11 Food quality – 2nd semester – 15 ECTS

Learning objectives for the exam

The learning objectives for this exam are equal to the learning objectives for the subject elements: food microbiology, food quality and quality measuring, as well as food safety and legislation. The learning objectives are specified in the national and the institutional part of the curriculum.

Exam form and organisation

The exam is an oral examination based on a task which is assigned on the basis of a draw. Preparation time 2 days/48 hours. The duration of the oral examination is 30 minutes, divided according to: presentation 10-15 min, exam 10-15 min and discussion of marks 5 min.

Prerequisites to take the exam

A prerequisite to take the exam is the fulfilment of the obligation to participate in classes as described in section 13.

Assessment criteria

The assessment criteria consist of the oral presentation and the exam. The exam is assessed according to the 7-point scale and has an external co- examiner.

If the subjects are not completed in the same examination period, the individual subjects can be examined separately.

3.12 Food Technology – 2nd semester – 15 ECTS

Learning objectives for the exam

The learning objectives for the exam are the same as the learning objectives for Food Technology I, Food Technology II and the elective subject innovation and product development. The learning objectives are specified in the institutional part of the curriculum

Exam form and organisation

The exam is an oral examination based on a task which is assigned on the basis of a draw. Preparation time 2 days/48 hours. The duration of the oral examination is 30 minutes, divided according to: presentation 10-15 min, exam 10-15 min and discussion of marks 5 min.

Prerequisites to take the exam

A prerequisite to take the exam is the fulfilment of the obligation to participate in classes as described in section 13.

Assessment criteria

The assessment criteria consist of the oral presentation and the exam. The exam is assessed according to the 7-point scale and has an external co- examiner. If the subjects are not completed in the same examination period, the individual subjects can be examined separately.

3.13 Internship - 3rd semester - 15 ECTS

Learning objectives for the exam

The learning objectives for the exam are equal to the learning objectives of the internship. The learning objectives are specified in the national part of the curriculum.

Exam form and organisation

The exam is an individual written report (max 8 standard pages), which based on the learning goals for the internship, describes the student's reflection on:

1) how theories and methods contained in the programme are used in practice
2) how results are evaluated as well as justification for the choice of appropriate solutions in relation to the tasks during the internship and
3) suggestions on how own identified learning needs can be met.

Prerequisites to take the exam

A prerequisite to take the exam is the fulfilment of the obligation to participate in classes as described in section 13.

Assessment criteria

The assessment criteria is the internship report. The exam is assessed according to the 7-point scale and has an internal co- examiner.

3.14 Bachelor project – 3rd semester – 15 ECTS

Learning objectives for the exam

The learning objectives for the exam are equal to the learning objectives of the bachelor project. The learning objectives are specified in the national part of the curriculum

Exam form and organisation

The exam is an individual written project report with subsequent oral examination. The oral exam has a duration of 25 min, divided according to: 10-15 min presentation, 10-15 min examination and 5 min for discussion of marks. The formal requirements for the report can be found in section 6 of the national curriculum.

Prerequisites to take the exam

In order to take the oral part of the exam, the bachelor report must be handed-in and the obligation to participate in classes must be met as described in section 13. The examination can only be taken after the final internship exam and all other exams have been passed.

Assessment criteria

The exam is assessed according to the 7-point scale and has an external co- examiner. The assessment basis is the written report and the oral presentation and examination, which are based on the report. The oral and the written part are weighted equally.

4. Rules for the completion of an internship

During the internship, the student will have a supervisor from the programme and a contact person in the company. Together, the internship company and the student determine the learning objectives to be attained by the student during the internship period, these must be based on the learning objectives found in the third part of the national part of the curriculum and which will subsequently provide the basis for the company's planning of the student's work. The learning objectives for each student must be approved by the Academy.

The internship period is 10 weeks and concludes with an exam based on a written report. See also section 3 concerning the description of the programme's exams.

The internship is generally considered equivalent to a regular full-time job (37 hours per week) and should reflect the requirements for work performance, commitment and flexibility that graduates could expect to meet in their first jobs.

5. The programme parts that can be completed abroad

5.1 The programme parts and rules for prior credit approval

The programme has subject elements, which means that it is possible for a student to take the 3rd semester abroad, just like it is possible for foreign students to study one semester in our programme. An internship can also take place abroad.

The students can, after applying for a programme's prior credit approval, take each individual programme component abroad.

Upon approval of the prior credit approval, the programme element is considered completed if it is passed according to the rules of the programme.

With prior credit approval for study abroad, students are required to document each approved and completed programme component when their exchange programme is completed. In connection with the application for prior credit approval, the students must give permission to the institution to obtain any required information after the completion of their studies.

The Academy has a wide network of partners abroad and the Academy's International Office can assist students who wish to take part of their programme abroad. International Office can be

contacted for further information, and information about specific opportunities. It should be noted, however, that a lot of work is required by the individual student if they wish to study abroad. It is up to the individual student to investigate available subjects for study abroad at the desired university, etc. The International Office can help with advice etc. but will not do any detailed planning. This is the student's own responsibility.

5.2 Exams abroad

Subjects
The student must take their exams at a partner institution abroad. The student must document all learning from the subjects taken at the partner institution in an online portfolio. A learning report for each subject, which describes the types of learning achieved in the subject, must be prepared.

The scope of the report must be appropriate to the course's credits, as agreed between the student and Business Academy Aarhus in advance, but at least two normal pages.

All the subject's tasks and corresponding hand-ins must be documented online in the portfolio. A link to the portfolio as well as proof of passing the exam at the partner institution must be handed into the Academy no later than four weeks after completion abroad. The portfolio, including learning reports, is assessed as pass/fail.

Bachelor Project
Business Academy Aarhus appoints a supervisor – and the report must be submitted and examined as explained in the national part of the curriculum in the section 'Requirements for the bachelor project'.

Rules for examinations abroad
For a description of the rules for conducting exams abroad, please refer to the section with useful tips on examinations on baaa.dk This also describes the costs involved if the examination is held abroad.

6. Requirements for written assignments and projects

For all exams, hand-ins etc., a standard page is defined as 2400 keystrokes including spaces and footnotes. The front page, table of contents, bibliography and appendices are excluded from this.

The requirements on the scope of written assignments and the correlation between the number of members of a group and the scope of reports are specified in the description of the individual exams.

Hand-in of written assignments and reports as part of an exam take place in WISEFLOW, unless otherwise stipulated.

6.1 What effect do spelling and writing skills have on the assessment?

In the assessment of reports and exams, in addition to the academic content, the student's spelling and writing ability is also important (weighted 10 per cent). The assessment reflects an overall assessment of the academic content as well as writing and spelling ability.

Students who can document a relevant disability can apply for an exemption from the requirement that spelling and writing skills are included in the assessment. The application must be sent to the programme head no later than 4 weeks before the exam.

7. The use of aids and assistance

During exams, all aids and assistance, including electronic devices, are allowed, unless a ministerial order or curriculum for the specific programme specifies restrictions for use.

Any rules for limitations in the use of aids will be apparent from the description of the individual exam.

8. Special exam conditions

The Academy offers special exam conditions for students with physical or mental impairments when students apply for this, and when the Academy considers that it is necessary to equate these students with other students in an exam situation.

Students may therefore, where this is justified by physical or mental disabilities, apply for special exam conditions. Applications must be submitted to the programme four weeks before the exam. Application requirements will be waived in cases of sudden health problems. The application must be accompanied by a medical certificate; statements from e.g. speech, hearing, dyslexic or blind institutions or other evidence of a medical condition or relevant specific disability.

Students with a non-English mother tongue may apply for permission to bring dictionaries for exams where aids are otherwise not permitted.

Applications for permission to bring any additional assistance must be submitted to the programme four weeks before the exam is held.

9. Cheating including the use of own and others' work (plagiarism)

Reports and other material for examinations must be prepared by the students themselves.

Upon the submission of written answers as well as physical and electronic submissions, the examinee confirms that the assignment/answers have been prepared without wrongful assistance.

9.1 Cheating and disruptive behaviour during exams

Cheating on tests and exams is covered by the Ministerial Order on Tests and Examinations in Professionally Orientated Programmes (the Examination Ministerial Order).

If a student cheats on an exam, the student will be expelled from the exam.

If the cheating occurs under aggravated circumstances, the student can be expelled from the programme for a shorter or longer period. With expulsion for cheating under aggravated circumstances, a written warning will be given stating that repetition could lead to a permanent expulsion from the programme.

Cheating is for instance:

- Improperly receiving help during an exam
- Improperly giving help to others during an exam
- To pass someone else's work off as your own (plagiarism - see http://en.stopplagiat.nu/)
- To use previously assessed work without a reference
- To use assistance which is not allowed for the exam in question

Expulsion from an exam for cheating means that the mark will be annulled and that one examination attempt has been used by the student.

If a student exhibits **disruptive behaviour** during an exam, the Academy can expel the student from the exam. In less severe cases, the Academy will only give a warning.

Expulsion can also occur once the exam has been held.

Presumption of cheating, including plagiarism during and after the exam
If during or after an exam, there is a suspicion that an examinee:

- Improperly obtained or provided help
- Has passed somebody else's work off as their own (plagiarism)
- Has used previously assessed work or parts thereof without reference (plagiarism)

this must be reported to the programme's head of department.

Business Academy Aarhus conducts systematic digital plagiarism control.

9.2 The process of clarification of exam cheating, including plagiarism

Postponement of the exam
If the report of cheating is plagiarism etc. in a written assignment, where this forms the basis of assessment with a subsequent oral examination, the head of the department must postpone the exam if it is not possible to determine whether plagiarism has taken place before the date of the exam.

Format and content of the report
The report must be submitted without undue delay as soon as there is a suspicion that cheating in an exam has occurred. The report must include a written presentation of the case, which includes information that can identify those incriminated, as well as a brief explanation and documentary evidence of the allegation. If one or more of the reported people are repeat offenders, this should be disclosed.

When reporting plagiarism, the plagiarised parts must be marked with a clear reference to the sources that have been plagiarised. The plagiarised text must also be marked in the source text.

Involvement of the examinee – consultation of affected parties
The head of the programme determines whether the consultation with the student happens orally, in writing or a combination thereof.

For an oral consultation, the examinee is summoned to an interview which aims to shed light on the case. The aim here is to present documentation of the suspected cheating to the student and to hear the student's side. The student has the right to have a representative accompany them to this meeting.

For the written consultation of interested parties, the documentation for the suspected cheating is sent to the student in order to request a written statement.

Sanctions for cheating and disruptive behaviour during an exam
If, after having the case explained, the head of department can confirm the suspicion of cheating, and if the action has or could have an impact on the assessment, the examinee must be expelled from the exam by the head of department.

In less severe cases, a warning is given first.

The student may not attend classes or take any examinations during their period of expulsion. With expulsion for cheating under aggravated circumstances, a written warning will be given stating that repetition could lead to a permanent expulsion from the programme.

Expulsion from an exam for cheating means that the mark will be annulled, and one examination attempt has been used by the student.

The student may not participate in a sick/re-exam but must wait until the programme's next ordinary exam.

The student may not attend classes or take any examinations during their period of ex-pulsion.

Complaints
The decision to expel and that an examination attempt has been used due to cheating is final and cannot be appealed to a higher administrative authority.

Complaints about legal issues (for example incapacity, consultation of interested parties, appeal guidelines, whether the Ministerial Order of Examinations has been interpreted correctly, etc.) may

be submitted to the Ministry of Higher Education and Science. The complaint must be submitted to the Academy and must be addressed to the head of the programme, who must then submit a report that the complainant has the opportunity to comment on, usually within a period of one week. The Academy then sends the complaint, the report and the complainant's comments (if any) to the Ministry of Higher Education and Science. The deadline for complaints to the institution is two weeks from the day the decision was communicated to the complainant, cf. Ministerial Order on examinations.

10. Complaints regarding exams and the appeals of decisions[1]

10.1 Complaints regarding exams

It is recommended that the examinee should get guidance from a student and career counsellor for the appeal procedure and for the preparation of a complaint.

The rules for exam complaints can be found in section 10 of the Ministerial Order on Examination Regulations.

In the Ministerial Order of Examinations, complaints are distinguished as either based on the

- the basis of the examination etc., the exam procedure and/or the assessment or
- complaints concerning legal matters.

The two kinds of complaints are handled differently.

10.2 Complaints about the basis of the examination etc., exam procedure and assessment

An examinee may submit a written and substantiated complaint within a period of two weeks after the exam has been announced in the usual way. Complaints can relate to:

- the basis of the exam, including exam questions, assignments, etc., as well as its relationship to the educational goals and requirements
- the exam procedure
- the assessment.

A student can complain about all exams, including written, oral and a combination thereof, as well as practical or clinical exams.

The complaint must be sent to the quality department via the complaint form on www.baaa.dk.

The process after a complaint is received is that the complaint is immediately submitted to the original examiners, i.e. the examiner and co-examiner for the examination. The opinions of the examiners will form the basis of the Academy's decision regarding academic issues. The Academy will usually decide on a deadline of two weeks for the submission of their opinion.

1. See Ministerial Order for Examinations chp 10 .

Immediately after the examiners' opinions are made available, the complainant has the opportunity to comment on the decision, usually with a week's deadline.

The Academy's decision is based on the compliant, the examiners' academic opinion and any possible comments the complainant may have regarding the report.

The Academy's decision must be in writing, and can be as follows:

- provision for a new assessment (reassessment)-only for written exams
- provision for a new exam (re-examination)
- that the student's complaint has been dismissed.

Should it be determined that a reassessment or re-examination will be offered, the head of department must appointment new examiners. Reassessment can only be offered for written exams where there is material for assessment; this is because the new examiners cannot (re) assess an already held oral examination and the original examiners' notes are personal and may not be disclosed.

If the decision is an offer for reassessment or re-examination, the complainant must be advised that a reassessment or re-examination could result in a lower mark. The student must, within a period of two weeks after the decision has been made, either accept or reject the offer. The decision is binding and may not be changed, and if the student does not accept the offer within the time limit, the reassessment or re-examination will not take place.

The reassessment or re-examination must take place as soon as possible.

With a reassessment, the examiners must submit all relevant documents i.e. the exam, the answer/s, the complaint, the original examiners' opinion along with the complainant's remarks as well as the Academy's decision.

The examiners will then notify the Academy of the outcome of the re-assessment, including a written justification and the assessment criteria.

Exam shortcomings

If it has been decided that a new assessment will be made or if there is an offer of a re-examination, the decision will be binding for all the examinees whose exams have the same shortcomings as the subject of the complaint.

The complaint must be sent via the complaint form on www.baaa.dk within two weeks (14 calendar days) after the evaluation of the exam in question has been announced. If the deadline falls on a public holiday, the first working day thereafter is the deadline.

A dispensation from the deadline can be granted if there are exceptional circumstances

10.3 Appeals and legal issues

The complainant can appeal the Academy's decision regarding any academic issues to an appeals' board. The appeal board's activities are covered by the Public Administration Act, which includes incapacity and confidentiality.

The appeal must be sent to complaints@baaa.dk.

The deadline for an appeal is two weeks after the student has been informed of the decision. The same requirements as mentioned above under complaint (in writing, with reasons, etc.) also apply to the appeal.

The appeals board consists of two external examiners appointed by the chair of external examiners, as well as a lecturer eligible to examine, and a student within the same field of study (programme), they are both appointed by the head of department for that programme.

The appeals board makes a decision based on the original material that formed the basis for the Academy's decision and the student's substantiated appeal.

The board deals with the appeal and the resultant decision can be as follows:

- provision for a new assessment by new examiners, though this is only a possibility with written exams
- provision for a new examination (re-examination) by new examiners
- that the student's appeal has been unsuccessful.

If the decision is an offer for reassessment or re-examination, the complainant must be advised that a reassessment or re-examination could result in a lower mark. The student must, within a period of two weeks after the decision has been made, accept or reject the offer. This decision is binding and may not be changed.

If the student does not accept the offer within the time limit, the reassessment or re-examination will not take place.

The reassessment or re-examination must take place as soon as possible.

With a reassessment, the examiners must submit all relevant documents i.e. the exam, the answer/s, the complaint, the original examiners' opinion along with the complainant's remarks as well as the Academy's decision.

Appeals must be decided within two months – for summer exams, within three months – after the appeal has been filed.

The appeal board's decision is final, which means that the case cannot be appealed to a higher administrative authority with regard to the academic part of the complaint.

10.4 Complaints concerning legal matters

Complaints concerning legal issues in the decisions made by the examiners for the reassessment or re-examination or the appeal board's decision must be submitted to Business Academy Aarhus within a period of two weeks from the day the decision is communicated to the complainant.

Complaints concerning legal issues in the decisions taken by the Academy in accordance with a Ministerial Order (for example, incapacity, whether the Ministerial Order of Examinations has been interpreted correctly, etc.) may be submitted to the Academy who must submit a report that the complainant has the opportunity to comment on within a period of normally one week. The Academy then sends the complaint, the report and the complainant's comments (if any) to the Ministry of Higher Education and Science. The deadline for submission of the complaint to the Academy is two weeks (14 calendar days) from the day the decision was communicated to the complainant.

11. Indication of applied teaching and work methods

Teaching at the Business Academy Aarhus is based on our educational platform.

This means that teaching is based on appropriate business practices and connects theory with practice. Problems from different types of companies working within the industries relevant to the programme will be involved.

The teaching will be organised to provide variation. This will be achieved by group teaching, project work, interdisciplinary cases, group work, guest lectures and company visits. Lectures can occur to a limited degree. The different learning styles will, above and beyond the subject matter, also develop the students' ability to work both independently and to collaborate with others.

Teaching can be planned so that foreign languages are included in the teaching material and teaching. Additionally, the teaching will support the development of the student's IT skills.

12. Rules for credit for subject elements

12.1 Credit for subjects covered by the curriculum's institutional part

Passed institutional programme elements are equivalent to the corresponding elements at other educational institutions that offer this programme or other programmes that contain the relevant programme elements.

12.2 Prior credit approval

Students may apply for prior credit approval. For prior credit approval of studies in Denmark or abroad, students are required to document each approved and completed programme element on the completion of these studies. In connection with the application for prior credit approval, the students must give permission to the institution to obtain any required information after the completion of their studies.

Upon approval of the prior credit approval, the programme element is considered completed if it is passed according to the rules of the programme.

13. Rules for the student's duty to participate in the programme

To ensure the programme's learning objectives and goals can be achieved, and that the teaching methods work, you can see below precisely which programme elements require active attendance.

Active participation includes: Compulsory attendance for scheduled classes (80%). If the student is prevented from meeting due to illness, the student must notify student administration.	
1st semester	• Applied mathematics and physical chemistry - 2 hand-in assignments • Applied statistics and planning of experiments - 2 hand-in assignments • Communication and philosophy of science - 1 hand-in assignment, 3 oral presentations • Production and quality control – 1 oral presentation • Design of experiments – 2 hand-in assignments and 1 oral presentation • Commerce - compulsory attendance for scheduled classes
2nd semester **Study programme Chemical and Biotechnical Technology**	• The production of biomolecules – 2 hand-in assignments, 1 project report, 1 oral presentation • Bioproduction – 1 hand-in assignment, 1 project report, 1 oral presentation • Cell biology – 1 hand-in assignment, 1 project report, 1 oral presentation • Organic chemistry – 1 hand-in assignment, 1 project report, 1 oral presentation • Chemical analysis technique – 1 hand-in assignment, 1 project report, 1 oral presentation • Elective – chemical and biotechnical technology - 1 hand-in assignment, 1 project report, 1 oral presentation
2nd semester **Study programme** **Food Technology**	• Food microbiology - 2 case assignments including presentation, 1 project report, 1 oral presentation, • Food quality and quality measuring - 1 hand-in assignment, 1 project report, 1 oral presentation • Food safety and legislation – 2 case assignments including presentation • Food Technology I – 1 hand-in assignment, 1 project report, 1 oral presentation • Food Technology II – 1 hand-in assignment, 1 project report, 1 oral presentation • Elective – Innovation and product development - 1 hand-in, presentation of project
3rd semester	• Meet the rules for the completion of an internship (section 4) • Internship – preparation of 1 poster, participate in 1 poster session prior to the internship exam

The programme will offer help and guidance as early as possible, if a student does not comply with the obligation to participate.

Compulsory attendance and any active attendance requirements which are prerequisites to participate in any exams are indicated in the description of each individual exam.

14. Criteria for the evaluation of study activity

Enrolment can be terminated for students who have not been active on a programme for a continuous period of at least one year.

Study activity is therefore defined as follows, students must have **within the last 12 months**:

- participated in the programme's exams
- fulfilled their obligation to participate in any kind of activity, which is included as part of the programme, including group work, joint projects, remote learning, etc. as stipulated in this curriculum
- handed in, as stipulated in this curriculum, the tasks, reports, (learning) portfolios, etc.., which are prerequisite requirements for participation in exams, and that they have credible content, and have not handed in material that others have copyright to
- been present for activities with compulsory attendance, as stipulated in this curriculum

Failure to meet one or more criteria in the definition of study activity can lead to the student's enrolment being terminated.

Periods during which the student has not been active due to leave, maternity/paternity leave, adoption, a documented illness or military service do not count. The student may be required to provide documentation for these circumstances.

The programme may grant exemptions from these provisions if there are exceptional circumstances. The exemption application must be sent to the head of department.

Prior to the student's enrolment being brought to an end, the student will be advised of this in writing. In connection with this, the student must be made aware of the rules above. The letter to the student must make it apparent that the student has 14 days to submit an application of exemption and evidence that the lack of activity on the programme should not count.

If the student has not responded within the time limit, their enrolment will be terminated.

If the student requests that their enrolment not be terminated, termination is delayed until the case has been decided by the head of the programme.

The student can complain about the decision to the pro-rector within two weeks of receipt of the decision. The complaint will delay any further action. If the pro-rector upholds the decision, the student may appeal to the Ministry of Higher Education and Science within two weeks of receipt of the decision with respect to any legal issues.

Rules about the exams, which the students according to the Ministerial Order for Examinations should have participated in before the end of the 2nd semester and passed before the end of the 2nd semester, and where the Ministerial Order for this programme has fixed time limits for completion of the programme, apply irrespective of the above rules.

Study activity and SU
If you start on a new higher education programme on 1 July 2016 or later and get SU while you are studying, you cannot postpone your programme for more than 6 months (equivalent to 30 ECTS) in proportion to the number of months you have had SU for your programme. If the student postpones their programme for more than 6 months, SU will be stopped.

As an educational institution, we continuously check the students' study activity. Read more about the SU rules on su.dk. (in Danish only)

15. Requirements concerning a foreign language

All the programme's teaching materials and teaching is done in English.

The exams will be conducted in Danish for students enrolled in professionsbachelor i laboratorie- og fødevareteknologi, while exams will be conducted English for students enrolled in the Bachelor in Chemical and Biotechnical Technology and Food Technology.

No additional knowledge of a foreign language is required, other than what is stated in the admission requirements.

16. Rules of exemption

If warranted by exceptional circumstances, the Academy may deviate from what has been stated in this curriculum. The various institutions must cooperate in order to have a homogenous dispensation policy.

17. Commencement

This part of the institutional curriculum is valid from 10 August 2020 and is valid for all students who are enrolled at the 10 August 2020 and students who are enrolled after 10 August 2020.

18. Legal basis

The following current legislation applies to the programme:

- Ministerial Order no. 786 from 08/08/2019: Ministerial Order for Academies of Professional Higher Education
- Ministerial Order no. 1343 from 10/12/2019: Ministerial Order for Academy Profession degree programmes and Bachelor degree programmes (LEP law).

- Ministerial Order no. 1162 from 10/07/2020: Ministerial Order for technical and commercial business academies and professional bachelor courses
- Ministerial Order no. 18 from 09/01/2020: Ministerial Order for examinations in higher educational business programmes
- Ministerial Order no. 152 from 26/02/2020: Ministerial Order for admission to business academies and professional bachelor courses
- Ministerial Order no. 114 from 03/02/2015: Ministerial Order for marking scales and other assessment criteria

The applicable laws and ministerial orders are available on www.retsinfo.dk (in Danish only).