

Guide to choosing courses in the Master's degree in Molecular Biology

Programme structure:

Compulsory Molecular Biology courses
Elective course

1. Semester	Elective course (10 ECTS)	Elective course (10 ECTS)	Elective course (10 ECTS)
2. Semester	Molecular Biology Project (10 ECTS)*	Elective course (10 ECTS)	Elective course (10 ECTS)
3. Semester	Master's Thesis in Molecular Biology (60 ECTS)		
4. Semester			

* Molecular Biology Project can also be placed in the first semester

Choices you must make during the master's programme and the associated rules

The master's thesis:

The thesis can be either experimental (30–60 ECTS) or theoretical (30 ECTS). If you choose a shorter thesis, you will gain additional ECTS that can be used for electives.

The thesis must start within one year after beginning the master's programme.

If you want to postpone the start, you must apply for a dispensation.

Molecular Biology Project

In addition to the thesis, students must complete a mandatory molecular biology project worth 10 ECTS.

This project can be placed in the first semester, or the second semester (most commonly right before the thesis).

Industry Project

An industry project is a collaboration with a company and can be worth 10 ECTS, 15 ECTS, 20 ECTS, 30 ECTS

If you complete an industry project of 30 ECTS, the master's thesis can be a maximum of 30 ECTS.

More information can be found in the course catalogue or the [student portal](#).

Study Abroad

Students may choose to study abroad during either the first or second semester of the master's programme.

Information meetings about study abroad opportunities are held every October.

Specialisation or Minor

During the master's programme, you must complete either:

At least one specialisation (preferably two), or
a minor in another subject

This requirement does *not* apply if you spend one semester abroad.

Individual study plans can be arranged with the programme coordinator.

Generally, the degree must include 90 ECTS in molecular biology subjects, and the Molecular Biology Project (10 ECTS) and the master's Thesis (60, 45, or 30 ECTS) are considered as molecular biology subjects.

Specialisation

Specialisation tracks:

During the first year of the master's programme, you choose up to two specialisation tracks that provide academic depth and prepare you for project and thesis work.

You are not bound by the specialisation you chose during your bachelor's degree.

Available specialisation tracks:

Molecular Cell Biology
Plant Molecular Biology
Molecular Nutrition
Protein Science
Bioinformatics

Specialisation courses

Codes:

(A) = Autumn semester

(Sp) = Spring semester

(Su) = Summer course

Molecular Cell Biology	<p><u>Compulsory:</u> Eukaryotic Model Organisms (A)</p> <p>combined with either Cell Biology in Health, Ageing and Disease (Sp) or RNA Molecular Biology (Sp)</p> <p>Recommended supplementary courses:</p>
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	<p>Immunology and Microbiology (A) Neurobiology (Sp) Single-cell, Single-molecule: The Next Level in Cell Biology (Sp)</p>
Plant Molecular Biology	<p>Compulsory: Molecular Interaction in Biological Systems (A) Plant-based Food – Molecular Genetics and Biochemistry (Sp)</p> <p>Recommended supplementary courses: Eukaryotic Research Organisms (A) Next-generation Sequencing (Su) Analysis of GWAS Data with a Focus on Prediction of Complex Phenotypes (Su) Hands-on Advanced Methods and Techniques in Plant Science and Biotechnology (Su)</p>
Molecular Nutrition	<p>Compulsory: Bioactive Food Components (A) Plant-based Food – Molecular Genetics and Biochemistry (Sp)</p> <p>Recommended supplementary courses Cell Biology in Health, Ageing and Disease (Sp) Immunology and Microbiology (A) Organic Chemistry II (Sp) Eukaryotic Research Organisms (A) Advanced Molecular Nutrition (Sp)</p>
Protein science	<p>Compulsory: Biomolecular Design and Nanotechnology (A) or Protein Science (A) Bio-Molecular Structure Determination (Sp)</p> <p>Recommended supplementary courses: Immunology and Microbiology (A) Organic Chemistry II (Sp) Medicinal Chemistry I (Sp)</p>

	Medicinal Chemistry II (Sp)
Bioinformatics*	<p>Examples of possible courses:</p> <p>Data Science in Bioinformatics (A)</p> <p>Evolutionary Thinking (A)</p> <p>Quantitative Genetics (A)</p> <p>Linear Models in Animal Breeding (Sp)</p> <p>Computational Thinking in Bioinformatics (A)</p> <p>*There is no fixed plan for this specialisation. Courses are arranged in agreement with the programme coordinator</p>

Students are encouraged to search the course catalogue for additional master's courses beyond those listed here.

Tip:

Look at study programmes from other degrees for inspiration. However, there is a risk of course overlap if you deviate significantly from the specialisation tracks.

Minor (Tilvalg)

You may complete a minor in a non-molecular biology subject by taking 30 ECTS in that field.

A minor can broaden your education and may help qualify you for jobs such as upper secondary school teacher. Common minors include Chemistry or Biology
Since the master's programme does not include mandatory supporting courses, you must take 30 ECTS of electives within the chosen subject.

Even with a minor, you must still complete the Molecular Biology Project and the Master's thesis.

Courses outside the Faculty of Natural Sciences (NAT)

If you want to take a course outside NAT, it must be pre-approved by the study board.

Before applying:

1. Your programme coordinator must approve the inclusion of the course in your study plan in the contract generator.

Then apply for pre-approval through:

Mitstudie.au.dk → Apply to your study board → Apply for pre-approval of a course at Aarhus University

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Summer Courses (AU Summer University)

AU Summer University allows AU students to take 5 ECTS-courses during summer (max. 10 ECTS pr. summer).

If you take a 5 ECTS summer course, it will count in your study plan. You will then only need 25 ECTS in the following semester.

Courses must:

- be agreed with your programme coordinator
- be pre-approved via **mitstudie.au.dk**

More information:

<https://studerende.au.dk/summeruniversity/summer-university-paa-au/>

Email contact:

summeruniversity@au.dk

Career-Oriented Courses

You can orient your master's programme toward **industry careers** by choosing relevant courses.

Examples:

- Industry Project in Molecular Biology (10, 15, 20, or 30 ECTS) (Autumn or Spring)
- Trends in Nanoscience – Communication and Entrepreneurship (F)
- Bio-Entrepreneurship (E)

Considerations when planning your master's programme

When designing your study programme, start by thinking about what you want to achieve with your master's degree.

For example:

- Do you want deep expertise through a specialisation?
- Do you want broader academic skills by taking a minor in another subject?
- Do you want an industry project to prepare for work outside academia?

These are just examples of considerations before choosing courses.

Once you have selected your courses:

1. Your master's study plan must be approved by the programme coordinator via the [contract generator](#).
2. Approval is required before you can register for courses.

Course Registration Periods

- 1–5 May → Autumn semester courses
- 1–5 November → Spring semester courses

If you are unsure which courses to choose, contact the **programme coordinator for guidance**.