MSC IN PHYSICS*
A RESEARCH-INTENSIVE DEGREE WITH SCOPE FOR COLLABORATION

You adjust the lasers in the lab before going to your next lecture on cold atoms. You feed your computer the latest measurements from the scanning tunnelling microscope, and see if the placement of the extra atoms on the surface matches your model calculation. You do some work on your model for a quantum computer before going to the next lecture in quantum optics. Or you might be at CERN this week, running experiments with anti-protons to test new possibilities for radiation therapy, or predicting the fate of ultra-relativistic lead ions in the Large Hadron Collider.

Students on the MSc programme in Physics are actively involved in research and in the discussion of new discoveries and theories. The curriculum is tailored to the interests and intended profile of the individual.

FOCUS ON RESEARCH
Teaching on the MSc Physics programme is greatly influenced by the fact that the lecturers are active researchers. In this context, students benefit from the down-to-earth, informal relationship between the academic staff and students. When students write their thesis, they are connected with a group of researchers and become involved in one or more of the group’s research projects.

Students on the programme have a wide range of options for specialisation, both in the Department of Physics and Astronomy and via the department’s close collaboration with AU’s other centres, the Institute for Storage Ring Facilities (ISA) and the Interdisciplinary Nanoscience Centre (iNANO). The department also has research groups working at several institutions outside Denmark, including a number of the major European laboratories.

SPECIALISATION
The MSc in Physics programme is open to students with a BSc degree in physics or another BSc degree in science with substantial physics and mathematics content. The programme is challenging and research-oriented and reflects the interests of private-sector companies, research institutions, and the public sector. It is also flexible and can accommodate the interests and strengths of the individual student.

Students can specialise within (for example) atomic and molecular physics, solid-state physics, subatomic physics, or astrophysics. The programme also qualifies students for a career in research: students may apply for admission to the university’s PhD programme either during the MSc degree programme or on completion of the thesis.

I’m a qualified materials physicist. I work with advanced welding surfaces, so I use a fair bit of knowledge about solid-state physics and materials science. At the centre where I work, we’ve constructed different test setups, so I spend part of my working day planning and carrying out different wear tests and then analysing the results afterwards.

MADS WRAA HYTTEL
MSc in Physics
Industrial PhD project, FLSmidth

PLACED OF STUDY
Aarhus

WWW
masters.au.dk/physics

ANNUAL TUITION FEE
EU/EEA/Swiss citizens: FREE
Others: EUR 13,500

Fees are subject to change. See studyguide.au.dk
STUDENT LIFE
The Department of Physics and Astronomy aims to create a good student environment both in terms of working methods and social environment and facilities. When you write your master’s thesis in one of the department’s research groups, you will be given your own desk in an office shared with other students.

The department also has many social and academic associations with their own festive traditions. They organise events like the ‘hat party,’ celebrating the most recent graduates. There is also the Physics Friday bar, where students get together at the end of the week to enjoy a drink and a catch-up.

CAREERS
Graduates from the MSc Physics programme have a wide range of career opportunities. A number of graduates are working in the private sector in areas such as modern optics, materials physics, or surface physics. Large IT companies, patent agencies, and the financial sector are increasingly hiring one or more physicists on their staff. The number of graduates working in hospitals as physicists has also dramatically increased, with most of these working in radiation physics and radiation therapy. Some of our recent graduates are in research positions at universities or at public research institutions.

ADMISSION REQUIREMENTS
Students must have a bachelor of science degree, preferably in physics. Admission may be granted based on a BSc in another field provided it includes core courses in physics and astronomy totalling a minimum of 60 ECTS, as well as basic subject components in mathematics and statistics totalling at least 30 ECTS. Other qualifications may also give admission to the Master’s programme, provided the university assesses that their level, extent, and content correspond to the requirements mentioned above.

SELECTION CRITERIA
As the Master’s programme admits only a limited number of students each year, meeting the admission requirements does not in itself guarantee admission to the programme. Student places are allocated on the basis of an overall assessment. In evaluating qualified applicants, the admissions committee assesses applicants according to the following criteria: academic background; overall grade level of bachelor’s degree; grades achieved on relevant courses; and relevant courses (measured in credit units) included in the bachelor’s degree.

Relevant courses include core courses within the subject areas of physics, astronomy, mathematics, and statistics.

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