

MSc Applied Physics - TU Delft

Master's Courses for Exchange Students

The course package proposals indicated here are composed considering the coherence of their contents. Overlap between lectures and exams of the courses within the same package is not likely but may occur due to unforeseen circumstances leading to schedule modifications. The course package proposals are intended for MSc students and students in the process of finalizing their BSc programme.

Please read the courses' pre-requisites [here](#) to determine whether the courses you select are a good fit for your educational background.

Fall semester 2023

Course Proposals Master Applied Physics 2023-2024						
Identifier	Course name	Credits	Period			
			1	2	3	4
AP3991	Research Project (BSc/MSc level) * Can be combined with 0-15 ECTS course work	15-30 ECTS				
Minor Quantum Science and Quantum Information (BSc level) **						
TN-MI-219	For more information, please see the following link	30 ECTS				
Taste All Departments						
Identifier	Course name	Credits	Period			
			1	2	3	4
AP3122	Advanced Optical Imaging	6 ECTS				
AP3261	Mesoscopic Physics	6 ECTS				
AP3352	Introduction to Nuclear Science and Engineering	6 ECTS				
AP3511	Biophysics	6 ECTS				
ME45043	Advanced Fluid Dynamics for AP	6 ECTS				
1st semester Physics for Energy MSc Track						
Identifier	Course name	Credits	Period			
			1	2	3	4
AP3001	Mathematical Methods for Physics	9 ECTS				
AP3032	Continuum Physics	6 ECTS				
AP3071	Advanced Electrodynamics	6 ECTS				
AP3333	Physics of Energy Materials	6 ECTS				
WM0320TU	Ethics and Engineering	3 ECTS				
1st semester Physics for Fluids Engineering MSc track						
Identifier	Course name	Credits	Period			
			1	2	3	4
AP3001	Mathematical Methods for Physics	9 ECTS				
AP3021	Advanced Statistical Mechanics	6 ECTS				
AP3032	Continuum Physics	6 ECTS				
ME45043	Advanced Fluid Dynamics for AP	6 ECTS				
WM0320TU	Ethics and Engineering	3 ECTS				
1st semester Physics for Health and Life MSc track						
Identifier	Course name	Credits	Period			
			1	2	3	4
AP3001	Mathematical Methods for Physics	9 ECTS				
AP3071	Advanced Electrodynamics	6 ECTS				
AP3232	Medical Imaging Signals and Systems	6 ECTS				
AP3511	Biophysics	6 ECTS				
WM0320TU	Ethics and Engineering	3 ECTS				

1 st semester Physics for Instrumentation MSc track						
Identifier	Course name	Credits	Period			
			1	2	3	4
AP3001	Mathematical Methods for Physics	9 ECTS				
AP3032	Continuum Physics	6 ECTS				
AP3071	Advanced Electrodynamics	6 ECTS				
AP3122	Advanced Optical Imaging	6 ECTS				
WM0320TU	Ethics and Engineering	3 ECTS				
1 st semester Physics for Quantum Devices and Quantum Computing MSc track						
Identifier	Course name	Credits	Period			
			1	2	3	4
AP3001	Mathematical Methods for Physics	9 ECTS				
AP3021	Advanced Statistical Mechanics	6 ECTS				
AP3261	Mesoscopic Physics	6 ECTS				
AP3303	Applications of Quantum Mechanics	3 ECTS				
AP3421	Fundamentals of Quantum Information	4 ECTS				
AP3421-PR	Quantum Information Project	2 ECTS				

* A **Research Project** (of at least 15 ECTS) at one of our groups within the Faculty of Applied Sciences. It is possible to combine the Research Project with courses. The larger the project, the more chance to be accepted by the department. The course code of the Research project is AP3991. A Research Project of 24 EC can be finalized before Christmas. Please do notice that an early termination of a TU Delft housing rental contract is not possible.

** The **Minor Quantum Science and Quantum Information** can also be finalized before Christmas. Without taking part in the group project, a maximum of 24 EC can be obtained. Please do notice that an early termination of a TU Delft housing rental contract is not possible.

The **study guide of the MSc Applied Physics** can be found via [this link](#). Please note that the course offerings and time schedules may be subject to modifications.

The following **BSc courses Applied Physics** are taught in English and open for exchange students: Introduction to Biophysics ([TN1651](#)) and Systems and Signals ([TN2545](#)). For more information, please see the study guide for the BSc Applied Physics, which can be found [here](#).

We do not recommend mixing courses from various programmes and/or faculties since this will likely lead to scheduling conflicts and overlap. Such scheduling conflicts are the responsibility of the student.

Students that intend to do a **research project** are strongly encouraged to take a proactive role in finding a supervisor and research project within the Applied Physics department. The first step is to find a scientific contact person within the Faculty of Applied Sciences (maybe someone you have already been in contact with or are planning to collaborate with) and get direct approval from the professor of the group where you wish to do your research. In most cases you will work under the supervision of a PhD student and his/her professor. Before applying to any of our two annual exchange periods, ideally you will already have arranged a project yourself or you are in the process of doing so. Please mention the actions you have taken in your application as well. In special cases, we may assist you in finding a supervisor for the research project after the application deadline, but as mentioned earlier, we expect you to take the lead.

More information about the departments of the Faculty of Applied Sciences can be found on [this webpage](#).

When contacting our academic staff for the first time, we recommend including the following information in your e-mail:

- Why you have chosen TU Delft and the respective department
- That you are an exchange student from a TU Delft partner university, registered through the International Office Applied Sciences

- The research area/topic you are interested in and why
- A resume covering your experiences and personal details
- A transcript of records

Spring Semester 2024

Please note that the following course proposals are based on the academic year 2022-2023, more information on the availability of courses in the Spring semester of 2024 will follow.

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Identifier	Course name	Credits	Period				
			1	2	3	4	
AP3991	Research Project (BSc/MSc level) * Can be combined with 0-15 ECTS course work	15-30 ECTS					
2 nd semester Physics for Energy							
Identifier	Course name	Credits	Period				
			1	2	3	4	
AP3141	Environmental Physics	6 ECTS					
AP3211	Advanced Solid State Physics	6 ECTS					
AP3341	Nuclear Reactor Physics	6 ECTS					
CH3222	Energy Storage in Batteries	4 ECTS					
CH3632	Chemistry and Physics of Solar Cells	6 ECTS					
SET3085	Hydrogen Technology	4 ECTS					
2 nd semester Physics for Fluids Engineering							
Identifier	Course name	Credits	Period				
			1	2	3	4	
AP3082	Computational Physics	6 ECTS					
AP3171	Advanced Physical Transport Phenomena	6 ECTS					
AP3181	Applied Multiphase Flow	6 ECTS					
AP3551	Computational Multiphase Flow	6 ECTS					
AP3563	Water in the Atmosphere	5 ECTS					
2 nd semester Physics for Health and Life							
Identifier	Course name	Credits	Period				
			1	2	3	4	
AP3132	Advanced Digital Image Processing	6 ECTS					
AP3162	Physics of Biological Systems: Mathematical modelling in Systems Biology	6 ECTS					
CH3763	Nuclear Medicine	3 ECTS					
NB4160	Engineering of Living Systems	3 ECTS					
AP3531	Acoustical Imaging	6 ECTS					
AP3582	Medical Physics of Photon and Proton Therapy	6 ECTS					
2 nd semester Physics for Instrumentation							
Identifier	Course name	Credits	Period				
			1	2	3	4	
AP3091	Elementary Particles	6 ECTS					
AP3152	Optics for Lithography	6 ECTS					
AP3382	Advanced Photonics	6 ECTS					
AP3401	Introduction to Charged Particle Optics	6 ECTS					
AP3701	Submm and Terahertz Physics and Applications	3 ECTS					
EE4745	Superconducting Astronomical Instrumentation	5 ECTS					
2 nd semester Physics for Quantum Devices and Quantum Computing							
Identifier	Course name	Credits	Period				
			1	2	3	4	

AP3113	Quantum Optics	6 ECTS					
AP3211	Advanced Solid State Physics	6 ECTS					
AP3222	Nanotechnology	6 ECTS					
AP3432	Quantum Hardware 1 - Theoretical Concepts	4 ECTS					
AP3442	Quantum Hardware 2 - Experimental State of the Art	4 ECTS					
AP3663	Special Topics in Quantum Technology	4 ECTS					

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Last update February 2023