

## MSc Applied Physics - TU Delft

### Master's Courses for Exchange Students

The course package proposals indicated here are composed taking into account 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](#) in order to determine whether the courses you select are a good fit for your educational background.

#### Fall semester 2021

Course Proposals Master Applied Physics 2021-2022						
Identifier	Course name	Credits	Period			
			1	2	3	4
<a href="#">AP3991</a>	Research Project (BSc/MSc level)* Can be combined with 0-15 ECTS course work	15-30 ECTS				
<b>Minor Quantum Science and Quantum Information (BSc level)**</b>						
TN-MI-219	For more information, please see the following <a href="#">link</a>	30 ECTS				
<b>Taste All Departments</b>						
Identifier	Course name	Credits	Period			
			1	2	3	4
<a href="#">AP3122</a>	Advanced Optical Imaging	6 ECTS				
<a href="#">AP3261</a>	Mesoscopic Physics	6 ECTS				
<a href="#">AP3352</a>	Introduction to Nuclear Science and Engineering	6 ECTS				
<a href="#">AP3511</a>	Biophysics	6 ECTS				
<a href="#">ME45043</a>	Advanced Fluid Dynamics for AP	6 ECTS				
<b>1<sup>st</sup> semester Physics for Energy MSc Track</b>						
Identifier	Course name	Credits	Period			
			1	2	3	4
<a href="#">AP3001</a>	Mathematical Methods for Physics	9 ECTS				
<a href="#">AP3032</a>	Continuum Physics	6 ECTS				
<a href="#">AP3071</a>	Advanced Electrodynamics	6 ECTS				
<a href="#">AP3333</a>	Physics of Energy Materials	6 ECTS				
<a href="#">WM0320TU</a>	Ethics and Engineering	3 ECTS				
<b>1<sup>st</sup> semester Physics for Fluids Engineering MSc track</b>						
Identifier	Course name	Credits	Period			
			1	2	3	4
<a href="#">AP3001</a>	Mathematical Methods for Physics	9 ECTS				
<a href="#">AP3021</a>	Advanced Statistical Mechanics	6 ECTS				
<a href="#">AP3032</a>	Continuum Physics	6 ECTS				
<a href="#">ME45043</a>	Advanced Fluid Dynamics for AP	6 ECTS				
<a href="#">WM0320TU</a>	Ethics and Engineering	3 ECTS				
<b>1<sup>st</sup> semester Physics for Health and Life MSc track</b>						
Identifier	Course name	Credits	Period			
			1	2	3	4
<a href="#">AP3001</a>	Mathematical Methods for Physics	9 ECTS				
<a href="#">AP3071</a>	Advanced Electrodynamics	6 ECTS				
<a href="#">AP3232</a>	Medical Imaging Signals and Systems	6 ECTS				
<a href="#">AP3511</a>	Biophysics	6 ECTS				
<a href="#">WM0320TU</a>	Ethics and Engineering	3 ECTS				

1 <sup>st</sup> semester Physics for Instrumentation MSc track						
Identifier	Course name	Credits	Period			
			1	2	3	4
<a href="#">AP3001</a>	Mathematical Methods for Physics	9 ECTS				
<a href="#">AP3032</a>	Continuum Physics	6 ECTS				
<a href="#">AP3071</a>	Advanced Electrodynamics	6 ECTS				
<a href="#">AP3122</a>	Advanced Optical Imaging	6 ECTS				
<a href="#">WM0320TU</a>	Ethics and Engineering	3 ECTS				
1 <sup>st</sup> semester Physics for Quantum Devices and Quantum Computing MSc track						
Identifier	Course name	Credits	Period			
			1	2	3	4
<a href="#">AP3001</a>	Mathematical Methods for Physics	9 ECTS				
<a href="#">AP3021</a>	Advanced Statistical Mechanics	6 ECTS				
<a href="#">AP3261</a>	Mesoscopic Physics	6 ECTS				
<a href="#">AP3303</a>	Applications of Quantum Mechanics	3 ECTS				
<a href="#">AP3421</a>	Fundamentals of Quantum Information	4 ECTS				
<a href="#">AP3421-PR</a>	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 2022

Course Proposals Master Applied Physics 2021-2022							
Identifier	Course name	Credits	Period				
			1	2	3	4	
<a href="#">AP3991</a>	Research Project (BSc/MSc level)* Can be combined with 0-15 ECTS course work	15-30 ECTS					
2 <sup>nd</sup> semester Physics for Energy							
Identifier	Course name	Credits	Period				
			1	2	3	4	
<a href="#">AP3141</a>	Environmental Physics	6 ECTS					
<a href="#">AP3211</a>	Advanced Solid State Physics	6 ECTS					
<a href="#">AP3341</a>	Nuclear Reactor Physics	6 ECTS					
<a href="#">CH3222</a>	Energy Storage in Batteries	4 ECTS					
<a href="#">CH3632</a>	Chemistry and Physics of Solar Cells	6 ECTS					
<a href="#">SET3085</a>	Hydrogen Technology	4 ECTS					
2 <sup>nd</sup> semester Physics for Fluids Engineering							
Identifier	Course name	Credits	Period				
			1	2	3	4	
<a href="#">AP3082</a>	Computational Physics	6 ECTS					
<a href="#">AP3171</a>	Advanced Physical Transport Phenomena	6 ECTS					
<a href="#">AP3181</a>	Applied Multiphase Flow	6 ECTS					
<a href="#">AP3551</a>	Computational Multiphase Flow	6 ECTS					
<a href="#">CIE4708</a>	Water in the Atmosphere	5 ECTS					
2 <sup>nd</sup> semester Physics for Health and Life							
Identifier	Course name	Credits	Period				
			1	2	3	4	
<a href="#">AP3132</a>	Advanced Digital Image Processing	6 ECTS					
<a href="#">AP3162</a>	Physics of Biological Systems: Mathematical modelling in Systems Biology	6 ECTS					
<a href="#">CH3763</a>	Nuclear Medicine	3 ECTS					
<a href="#">NB4160</a>	Engineering of Living Systems	3 ECTS					
<a href="#">AP3531</a>	Acoustical Imaging	6 ECTS					
<a href="#">AP3582</a>	Medical Physics of Photon and Proton Therapy	6 ECTS					
2 <sup>nd</sup> semester Physics for Instrumentation							
Identifier	Course name	Credits	Period				
			1	2	3	4	
<a href="#">AP3091</a>	Elementary Particles	6 ECTS					
<a href="#">AP3152</a>	Optics for Lithography	6 ECTS					
<a href="#">AP3382</a>	Advanced Photonics	6 ECTS					
<a href="#">AP3401</a>	Introduction to Charged Particle Optics	6 ECTS					
<a href="#">AP3701</a>	Submm and Terahertz Physics and Applications	3 ECTS					
<a href="#">EE4635</a>	Terahertz Superconducting Astronomical Instrumentation	4 ECTS					
2 <sup>nd</sup> semester Physics for Quantum Devices and Quantum Computing							
Identifier	Course name	Credits	Period				
			1	2	3	4	
<a href="#">AP3112</a>	Quantum Optics and Lasers	6 ECTS					
<a href="#">AP3211</a>	Advanced Solid State Physics	6 ECTS					

<a href="#">AP3222</a>	Nanotechnology	6 ECTS					
<a href="#">AP3432</a>	Quantum Hardware 1 - Theoretical Concepts	4 ECTS					
<a href="#">AP3442</a>	Quantum Hardware 2 - Experimental State of the Art	4 ECTS					
<a href="#">AP3663</a>	Special Topics in Quantum Technology	4 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 **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.

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

*Last update July 2021*