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Appendix for the double Bachelor's degree programme in Mathematics and Physics

2026-2027

- General information
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- Course units in the second and third year of the double degree programme
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General information

This document serves as an appendix to the Teaching and Examination Regulations of the degree programmes BSc Mathematics and BSc Physics; it describes the study programme (including transitional provisions) for students who desire a double Bachelor's degree in both Mathematics and Physics.

In order to obtain a Bachelor's degree in both Mathematics and Physics, a student has to be enrolled in both degree programmes. The learning outcomes of both programmes are achieved through a combination of courses listed in this document. Information on the programme learning outcomes and entry requirements of the individual courses can be found in the Teaching and Exam Regulations of the relevant degree programme.

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Course units in the first year of the double degree programme

The first year of the double degree programme has a workload of 80 ECTS.

Course unit name	Course code	ECTS	Math major	Phys major
Calculus 1	WBMA003-05	5	5	5
Linear Algebra 1	WBMA020-05	5	5	5
Physics Lab: Skills	WBPH077-05	5		5
Mechanics and Relativity	WBPH001-10	10	10	10
Analysis	WBMA012-05	5	5	
Introduction to Graph Theory	WBMA052-05	5	5	
Physics of the Quantum Universe	WBPH028-05	5		5
Electricity and Magnetism	WBPH033-10	10		10
Calculus 2	WBMA029-05	5	5	5
Computational Methods 1	WBPH064-05	5	5	5
Linear Algebra 2	WBMA035-05	5	5	5
Linear Systems	WBMA043-05	5	5	
Probability Theory	WBMA046-05	5	5	
Physics Lab: Research Project	WBPH076-05	5	5	5
Total ECTS		80	60	60

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Course units in the second and third year of the double degree programme

The second and third year of this combination has a workload of 170 ECTS:

Course unit name	Course code	ECTS	Math major	Math minor	Phys major	Phys minor
Group Theory	WBMA005-05	5	5			5
Metric and Topological Spaces	WBMA036-05	5	5			
Statistics	WBMA009-05	5	5			5
Complex Analysis	WBMA018-05	5	5			
Multivariable Analysis	WBMA022-05	5	5			
Geometry	WBMA034-05	5	5			5
Functional Analysis	WBMA033-05	5	5			
Numerical Analysis	WBMA062-05	5	5			
Partial Differential Equations	WBMA008-05	5			5	
Dynamical Systems	WBMA031-05	5	5			
One out of: • Project Chaos Theory (26/27) • Introduction to Coding Theory (27/28) • Introduction to Cryptography (26/27) • Project Systems Theory	 WBMA025-05 WBMA065-05 WBMA066-05 WBMA027-05	5	5			
Algebraic Structures	WBMA039-05	5	5			
Analysis on Manifolds	WBMA013-05	5	5			
Advanced Algebraic Structures	WBMA011-05	5	5			
Thermal Physics	WBPH002-10	10		10	10	
Computational Methods 2	WBPH065-05	5			5	
Quantum Physics 1	WBPH014-05	5			5	
Waves and Optics	WBPH032-05	5			5	
From Atoms to Solids	WBPH085-10	10		10	10	
Subatomic physics: concepts and experiments	WBPH088-05	5			5	
Fundamentals of Electronics	WBPH070-05	5		5	5	
Physics Lab: Advanced Experiments 1	WBPH074-05	5		5	5	

Quantum Physics 2	WBPH052-05	5			5	
Advanced Electrodynamics	WBPH079-05	5			5	
Advanced Mechanics	WBPH017-05	5				5
Relativistic Quantum Mechanics	WBPH045-05	5				5
Symmetry in Physics	WBPH047-05	5				5
One out of: ● Mathematics & Society: Ethical and Professional Aspects ● Physics, Astronomy & Society: Ethical and Professional Aspects	WBMA049-05 WBPH053-05	5	5		5	
Bachelor Research Project (double BSc Physics+Maths)	WBPH901-20	20	20		20	
Total ECTS		170	90	30	90	30

In addition, the Bachelor Research Project (double BSc Physics+Maths) is subject to the following entry requirements:

- passed courses of the Bachelor programme in Mathematics and the Bachelor programme in Physics having a total workload of at least 150 EC for each;
- approval of Career Portfolio (Mathematics programme);
- approval of study programmes by the Board of Examiners of both programmes.

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Transitional provisions

Double degree Mathematics & Physics: cohort 2024-2025 and earlier
In the academic year 2025-2026 the number of choices in the double-degree programme will be limited in order to make the programme more feasible from an organisational point of view. The table below indicates which of the new mandatory courses can be replaced by older optional courses provided these were passed before 1 September 2025.

New mandatory course(s)		**Replacement course(s)**	
Introduction to Graph Theory	WBMA052-05	Sets and Numbers	WBMA051-05
Computational Methods 1	WBPH064-05	Scientific Programming	WBMA053-05
Physics Lab: Research Project	WBPH07605	First-year Project Mathematics	WBMA041-05
Analysis on Manifolds Advanced Algebraic Structures	WBMA013-05 WBMA011-05	Oriëntatie op Onderwijs in de Bètawetenschappen Discrete Mathematics Stochastic Processes Philosophy of Science	WBEC002-05 WBMA019-05 WBMA048-05 FI180WET
Advanced Electrodynamics Subatomic Physics: concepts and experiments	WBPH079-05 WBPH088-05	Atoms & Molecules Cosmology	WBPH003-05 WBAS001-05
From Atoms to Solids	WBPH085-10	Structure of Matter	WBPH034-10

Several courses within the degree programme Physics have changed name, but their contents remain the same. The following table lists the relevant substitutions:

Old course	**New course**
Computational Methods in Science and Technology	Computational Methods 2
Electronics and Signal Processing	Fundamentals of Electronics
Astroparticle Physics	Advanced Electrodynamics
Physics Laboratory 1	Physic Lab: Skills
Physics Laboratory 2	Physic Lab: Research Project
Physics Laboratory 3	Physic Lab: Advanced Experiments 1
Physics Laboratory 4	Physic Lab: Advanced Experiments 2
Numerical Mathematics 1	Numerical Analysis