Master degree programme Physics
Appendices to the Teaching and Exam Regulations

Appendix I Teaching outcomes of the degree programme (art. 1.3)
The degree programme aims to train the students in such a way that they acquire the insight, skills and knowledge that allows the recipient of the degree to establish a professional career in the field of Physics.

Appendix II Specializations of degree programme (art. 2.2)
The degree programme has the following tracks:
- Advanced Materials
- Quantum Universe
- Science, Business and Policy

Appendix III Content of degree programme (art. 2.3)

Specialization Advanced Materials

Module	ECTS	Assessment	Practical	Prerequisites
Computational Physics	5	Assignments, reports	x	
Statistical Mechanics	5	Oral exam, assignments		
Mathematical Methods in Physics	5	Assignments		
Advanced Quantum Mechanics	5	Written exam		
Cross-disciplinary Materials Science	5	Report		
Structure at Macro, Micro and Nano Scale	5	Written exam, report/assignment		
Functional Properties	5	Written exam		
Characterisation of Materials	5	Written exam		
Elective specializing courses	20	See appendix IV	See app. IV	See appendix IV
Research	60	Assessment of performance, report, presentation, attendance general physics colloquium	x	Passed 35 ECTS of the masters's degree programme

Specialization Quantum Universe

Module	ECTS	Assessment	Practical	Prerequisites
Computational Physics	5	Assignments, reports	x	
Statistical Mechanics	5	Oral exam, assignments		
Mathematical Methods in Physics	5	Assignments		
Advanced Quantum Mechanics	5	Written exam		
General Relativity	5	Assignments, written exam		
Particle Physics Phenomenology	5	Written exam		
Electrodynamics of Radiation Processes	5	Written exam		
Student Seminar Quantum Universe	5	Presentations		
Elective specializing courses	20	See appendix IV	See app. IV	See appendix IV
Research	60	Assessment of performance, report, presentation, attendance general physics colloquium	x	Passed 35 ECTS of the masters's degree programme

Specialization Science, Business and Policy

Module	ECTS	Assessment	Practical
Computational Physics	5	Assignments, reports	x
Statistical Mechanics	5	Oral exam, assignments	
Mathematical Methods of Physics	5	Assignments	
Advanced Quantum Mechanics	5	Written exam	
Courses in Advanced Materials, Applied Physics or Quantum Universe or Optional courses in Physics	10	See appendix III and IV	See app.
Course Science, Business and Policy	20	Assignment, exam	
Internship Science, Business and Policy	40	Assessment of performance, reports	x
Physics Research / Thesis	30	Assessment of performance, report, presentation , attendance general physics colloquium	x

Appendix IV Optional Modules (art. 2.4)

Optional Courses in Advanced Materials

Module	ECTS	Assessment	Practical
Advanced Molecular Biophysics	5	Written exam, homework assignments	
Atomic and Molecular Interactions	5	Oral or written exam	
Mesoscopic Physics	5	Written exam	
Modern Laser Microscopy	5	Written exam	
Micromechanics	5	Oral exam, assignments and/or paper	
Non Linear Optics	5	Written exam	
Physical Materials Science	5	Written exam	
Physics of Lasers	5	Written or Oral exam	
Polymer Physics	5	Written exam	
Statistical Methods in Physics	5	Written exam	
Surfaces and Interfaces	5	Written exam	
Theoretical Condensed Matter Physics	5	Written exam, assignments	
Ultrafast Time-Resolved Spectroscopy	5	Written exam, report	x
Courses in Applied Physics or Quantum Universe, on individual approval of the Board of Examiners (max. of 10 ECTS)		As indicated in appendix III or IV of the corresponding programme	See app. III or IV of the corresponding programme

Optional Courses in Quantum Universe

Module	ECTS	Assessment	Practical
Atomic and Molecular Interactions	5	Oral or written exam	
Elementary Particle Physics	5	Oral exam	
Formation and Evolution of Galaxies	5	Written exam	
Fundamental Constants	5	Assignments, presentation	
Geometry and Topology	5	Assignments, oral presentation, report	
High-Energy Astrophysics	5	Assignments, oral presentation	
Lie groups in Physics	5	Oral or written exam	
Nuclear Astrophysics	5	Written exam or presentation	
Plasma Physics	5	Written exam	
Quantum Field Theory	5	Written exam	
Star and Planet Formation	5	Written exam, homework assignments, report	
Statistical Methods in Physics	5	Written exam	
Introduction to AdS/CFT	5	Oral exam	

Courses in Astronomy, Advanced Materials or Applied Physics, on individual approval of the Board of Examiners (max. of 10 ECTS)		As indicated in appendix III or IV of the corresponding programme	See app. III or IV of the corresponding programme

Appendix V Entry requirements (art. 3.2)

For students admitted to the programme there are no entry requirements for the individual Modules.

Appendix VI Admission to the degree programme and different specializations (art. 4.1.1 and 4.2)

Holders of the following Bachelor's degrees from the University of Groningen are considered to have sufficient knowledge and skills and will be admitted to the Master's degree programme in Physics on that basis:
- BSc Natuurkunde