Master's degree programme Physics
Appendices to the Teaching and Examination Regulations
2012-2013

Appendix A 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 B Specializations of degree programme (art. 2.2)
The degree programme has the following specializations:
- Theoretical Physics
- Experimental Physics
- Quantum Universe
- Science, Business and Policy

Appendix C Content of degree programme (art. 2.3)

Specialization Theoretical Physics

module	ECTS	assessment	practical
Symmetry in Physics	5	written examination	
Computational Physics	5	Assignments, reports	x
Relativistic Quantum Mechanics	5	written examination, assignments	
Quantum Field Theory	5	Written examination	
Theoretical Condensed Matter Physics	5	written examination, assignments	
Statistical Mechanics	5	oral examination, assignments	
Student Seminars	5	see appendix D	see app. D
Optional Courses in Science	20	see appendix D	see app. D
Free Electives	5	see appendix D	see app. D
Research	60	assessment of performance, report, presentation, attendance general physics colloquium	x

Specialization Experimental Physics

module	ECTS	assessment	practical
Symmetry in Physics	5	written examination	
Computational Physics	5	Assignments, reports	x
Statistical Methods in Physics	5	written examination	
Principles of Measurement Systems	5	written examination, assignments	
Student Seminars	5	see appendix D	see app. D
Optional Courses in Science	25	see appendix D	see app. D
Free Electives	10	see appendix D	see app. D
Research	60	assessment of performance, report, presentation, attendance general physics colloquium	x

Specialization Quantum Universe

module	ECTS	assessment	practical
General Relativity	5	assignments, written examination	
Astroparticle Physics	5	written examination	
Mathematical methods	5	assignments	
Computational Physics	5	Assignments, reports	x
Student Seminar Quantum universe	5	presentations	
Optional courses in Quantum Universe	15	see appendix D	see app. D
Optional Courses in Science	15	see appendix D	see app. D
Free Electives	5	see appendix D	see app. D
Research	60	assessment of performance, report, presentation, attendance general physics colloquuium	x

Specialization Science, Business and Policy

module	ECTS	assessment	practical
Computational Physics	5	Assignments, reports	x
Principles of Measurement Systems	5	written examination, assignments	
Optional courses in Science	20	see appendix D	see app. D
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 D Optional modules (art. 2.4)

Student Seminars

module	ECTS	assessment	practical
Student Seminar on Quantum Computation	5	presentation, assignments	
Student Seminar Quantum universe	5	presentations	

Optional Courses in Quantum Universe

module	ECTS	assessment	practical
Stellar Structure and Evolution	5	written examination, problem sets, computer model project	x
Quantum Field Theory	5	written examination	
Relativistic Quantum Mechanics	5	written examination, assignments	
Elementary Particles	5	oral examination	
Cosmic Structure Formation	5	Written examination, presentation, computer assignments	x
Dynamics of galaxies	5	written examination, assignments	
Many Particle Systems	5	written examination	
Introduction to Plasma Physics	5	written examination	
Atomic Interactions	5	Oral or written examination	
Applied Geometry	5	Assignments, oral presentation, report	

Optional Courses in Science

module	ECTS	assessment	practical
Courses that are obligatory in another specialization	5	as indicated in appendix C	as indicated in appendix C
Student seminars in excess of the minimal requirement	5	as indicated under Student Seminars	as indicated under Student Seminars
Optional courses in quantum universe in excess of the minimal requirement	5	as indicated under optional courses in quantum universe	as indicated under optional courses in quantum universe
Optional courses at master level in Applied Physics, (Applied) Mathematics, Astronomy, Chemistry, Chemical Engineering, Industrial Engineering and Management or Computer Science	5	as indicated in appendix C or D of the corresponding programme	See app. C or D of the corresponding programme
Accelerator Physics and Ion Optics	5	oral examination	
Capita Selecta Materials Science	5	oral examination	
Computer Simulation of Quantum Systems	5	Assignments, reports	
Contemporary Experiments in Molecular Physics	5	written examination	
Environmental Physics	5	written examination	
Experimental Methods of Trace Gas Research	5	written examination, report	
Isotope Production	5	oral examination	
Laser Cooling and Trapping	5	written examination	
Key Experiments in Atomic Physics	5	oral examination	
Mesoscopic Physics	5	written examination	
Micromechanics	5	oral examination, assignments and/or paper	
Non Linear Optics	5	written examination	
Nuclear Astrophysics	5	Written examination or presentation	
Nuclear Physics	5	Oral or written examination, assignments	
Radiation Physics	5	written examination, presentation	
Solid Mechanics	5	written examination, assignments, report	x
Surfaces and Interfaces	5	written examination	

Free Electives

module	ECTS	assessment	practical
Optional courses in any field taught at the university, on individual approval of the Board of Examiners	5	as indicated in appendix C or D of the corresponding programme	

Appendix E Entry requirements (art. 3.2)

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

Appendix F 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

Appendix G Application deadlines for admission for international students (art. 4.5.1)

Deadline of Application	**Non-EU students**	**EU students**
MSc Physics	April 1st 2013	May 1st 2013

Decision deadlines (art. 4.5.3)

Deadline of Decision	**Non-EU students**	**EU students**
MSc Physics	June 1st 2013	June 1st 2013