

Curriculum master Applied Physics for students enrolled 2017/2018

First and second year (M1 en M2)	
Name	EC
Compulsory track courses	20
Chair specific courses	10
Elective courses physics/technical	10
Elective courses free	10/0
Internship	20/30
Graduation assignment	50
Total master	120

Materials Physics Track		
Coursecode	Name	EC
Track courses:		
193510040	Theoretical Solid State Physics	5
193550020	Surfaces and Thin Layers	5
193530010	Nanophysics	5
193530020	Advanced Materials	5
Physics of Interfaces and Nanomaterials group (PIN), prof.dr.ir. H.J.W. Zandvliet		
<i>Chair specific courses:</i>		
201500167	Modern Topics in Condensed Matter Physics	5
-	Course in consultation with chair	-
<i>Recommended courses:</i>		
191411291	Applied Quantum Mechanics	5
200900066	Introduction to the Physics of Correlated Electrons	5
193565000	Capillarity Phenomena	5
201600180	Molecular Structure and Spectroscopy (part of AT module 9)	2.5
201000244	Capita Selecta PIN*	-
-	Course in consultation with chair	-
Interfaces and Correlated Electron Systems (ICE), prof.dr.ir. J.W.M. Hilgenkamp		
<i>Chair specific courses:</i>		
193530000	Introduction to Superconductivity	5
-	Course in consultation with chair	-
<i>Recommended courses:</i>		
200900066	Introduction to the Physics of Correlated Electrons	5
200900060	Capita Selecta ICE*	-
Quantum Transport in Matter (QTM), prof.dr.ir. A. Brinkman		
<i>Chair specific courses:</i>		
193530000	Introduction to Superconductivity	5
-	Course in consultation with chair	-
<i>Recommended courses:</i>		
200900066	Introduction to the Physics of Correlated Electrons	5
201000304	Capita Selecta QTM*	-
Computational Materials Science group (CMS), prof.dr. P.J. Kelly		
<i>Chair specific courses:</i>		
193510020	Electronic Structure Theory 1	5
193510030	Electronic Structure Theory 2	5
<i>Recommended courses:</i>		
191411291	Applied Quantum Mechanics	5
193570050	Advanced Quantum Mechanics	5
200900066	Introduction to the Physics of Correlated Electrons	5
201500405	Theory of Complex Functions	3
191551150	Numerical Techniques for Partial Differential Equations	5
-	Courses Optics track	-
193510900	Capita Selecta CMS*	-

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Materials Physics Track		
Coursecode	Name	EC
Energy Materials Systems (EMS), prof.dr.ir. H.J.M. ter Brake		
<i>EMS concerns material aspects, fluid mechanics and mass/heat transfer. For that reason is chosen for courses from two tracks.</i>		
<i>Track courses (15 EC):</i>		
193530020	Advanced Materials	5
<i>2 out of:</i>		
193570010	Advanced Fluid Mechanics	5
193510040	Theoretical Solid State Physics	5
193550020	Surfaces and Thin Layers	5
193530010	Nanophysics	5
<i>Chair specific courses:</i>		
193530000	Introduction to Superconductivity	5
201100214	Applications of Superconductivity	5
201100146	Cryogenic Science and Technology	5
<i>Recommended courses:</i>		
193580020	Experimental Techniques in Physics of Fluids	5
191551150	Numerical Techniques for Partial Differential Equations	5
201700026	Electrical Power Engineering and System Integration	5
201600019	Energy Conversion Technology	5
201400037	Linear Solid Mechanics	5
200900059	Capita Selecta EMS*	-

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Fluid Physics Track		
Coursecode	Name	EC
General track courses:		
193570010	Advanced Fluid Mechanics	5
193565000	Capillarity Phenomena	5
Specific track courses:		
For PoF:		
193580020	Experimental Techniques in Physics of Fluids	5
191551150	Numerical Techniques for Partial Differential Equations	5
For NI and PCF:		
193400121	Nano-Fluidics	5
201300135	Soft and Biological Matter	5
Physics of Fluids group (PoF), prof.dr. D. Lohse		
<i>Chair specific courses:</i>		
10 EC out of:		
193580010	Turbulence	5
201400194	Granular Matter	5
201400195	Fluids and Elasticity	2.5
193572010	Physics of Bubbles	2.5
193542070	Medical Acoustics	5
<i>Recommended courses:</i>		
201500405	Theory of Complex Functions	3
193720040	Introduction to Computational Fluid Dynamics	5
191560430	Nonlinear Dynamics	5
201300135	Soft and Biological Matter	5
193400121	Nano-Fluidics	5
193580900	Capita Selecta PoF*	-
Physics of Complex Fluids group (PCF), prof.dr. F.G. Mugele		
<i>Chair specific courses:</i>		
193735060	Colloids and Interfaces	5
193565900	Capita selecta PCF*	5
<i>Recommended courses:</i>		
201700187	Soft and Biological Techniques**	5
193720040	Introduction to Computational Fluid Dynamics	5
201300137	Ions and Devices	5
Nanolonics group (NI), prof.dr. S.J.G. Lemay		
<i>Chair specific courses:</i>		
201300137	Ions and Devices	5
201100190	Capita Selecta NI*	5
<i>Recommended courses:</i>		
201700187	Soft and Biological Techniques**	5
-	Course in consultation with chair	-

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Optics and BioPhysics Track		
Coursecode	Name	EC
Track courses:		
201300139	Laser Physics	5
193515000	Quantum Optics	5
201300141	Wave Optics	5
201400196	Quantum Emitters	5
Laser Physics and Nonlinear Optics group (LPNO), prof.dr. K.J. Boller		
<i>Chair specific courses:</i>		
193520030	Nonlinear Optics	5
193520040	Experimental Laser Physics and Nonlinear Optics	5
<i>Recommended courses:</i>		
191411291	Applied Quantum Mechanics	5
193400131	Nano-Optics	5
193520900	Capita Selecta LPNO*	-
Optical Sciences group (OS), dr.ir. H.L. Offerhaus (chair)		
<i>Chair specific courses:</i>		
2 out of:		
193400131	Nano-Optics	5
191210880	Integrated Optics	5
193500040	Experimental Laser Physics and Nonlinear Optics	5
<i>Recommended courses:</i>		
193400141	Nano-Electronics	5
193540900	Capita Selecta OS*	-
201500405	Theory of Complex Functions	3
193520030	Nonlinear Optics	5
201600180	Molecular Structure and Spectroscopy (part of AT module 9)	2.5
Complex Photonic Systems group (COPS), prof.dr. W.L. Vos		
<i>Chair specific courses:</i>		
201100074	Nanophotonics	5
201100075	Nanophotonic experiments	5
<i>Recommended courses:</i>		
191411291	Applied Quantum Mechanics	5
193510040	Theoretical Solid State Physics	5
201500405	Theory of Complex Functions	3
193570050	Advanced Quantum Mechanics	5
193500040	Experimental Laser Pphysics and Nonlinear Optics	5
193515900	Capita Selecta COPS*	-
Computational Chemical Physics group (CCP), prof.dr. C. Filippi, prof.dr. W.J. Briels		
<i>For CCP is chosen for a more interdisciplinary approach. For that reason the compulsory courses are a combination of Applied Physics courses.</i>		
<i>Compulsory courses:</i>		
191411291	Applied Quantum Mechanics	5
193570050	Advanced Quantum Mechanics	5
193510040	Theoretical Solid State Physics	5
201300135	Soft and Biological Matter	5
201700176	Computational Physics 1	2,5
201700177	Computational Physics 2	2,5
-	Course in consultation with chair	-
<i>Recommended courses:</i>		
201600262	Capita Selecta CCP*	5

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Optics and BioPhysics Track		
Coursecode	Name	EC
Biomedical Photonic Imaging group (BMPI), prof.dr.ir. W. Steenbergen		
<i>Chair specific courses:</i>		
193500000	Biomedical Optics	5
201400281	Advanced Medical Imaging and Therapy Systems	5
<i>Recommended courses:</i>		
193542070	Medical Acoustics	5
193640020	Biophysical Techniques and Molecular Imaging	5
201600260	Capita Selecta BMPI*	-
Nano BioPhysics group (NBP), prof.dr. M.M.A.E. Claessens		
<i>Chair specific courses:</i>		
193640020	Biophysical Techniques and Molecular imaging	5
1 out of:		
193640080	Biophysics	5
193400111	Bionanotechnology	5
201300135	Soft and Biological Matter	5
<i>Recommended courses:</i>		
201700187	Soft and Biological Techniques**	5
193400131	Nano-Optics	5
193500040	Experimental Laser Physics and Nonlinear Optics	5
193700010	AMM - Characterization	5
200900058	Capita Selecta NBP*	-

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