

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 I	5
193510030	Electronic structure theory II	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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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
Nanofluidics 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		
<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 physics 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		
Biomedical Photonic Imaging group (BMPI), prof.dr.ir. W. Steenbergen		
<i>Chair specific courses:</i>		
193500000	Biomedical Optics	5
201400281	Advanced Medical Imaging & Therapy Systems	5
<i>Recommended courses:</i>		
193542070	Medical acoustics	5
193640020	Biophysical Techniques & Molecular Imaging	5
201600260	Capita Selecta BMPI*	-
Nano BioPhysics group (NBP), dr. M.M.A.E. Claessens (chair)		
<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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