

Applied Physics Master Programme 2017/2018

Fluid Physics Track

| | Code | Course | EC | |
|-------------------------|-----------|---|-----|----------------------|
| 1 st quarter | 193570010 | Advanced Fluid Mechanics (Lohse/Gelderblom) | 5.0 | track course |
| | 201300135 | Soft and Biological Matter (Lemay) | 5.0 | track course NI, PCF |
| | 193735060 | Colloids and Interfaces (Wood, Lammertink, Duits) | 5.0 | chair course PCF |
| 2 nd quarter | 191551150 | Numerical techniques for PDE (Geurts/Schlottbom) | 5.0 | track course PoF |
| | 193580010 | Turbulence (Lohse) | 5.0 | chair course PoF |
| | 193572010 | Physics of Bubbles (Versluis) | 2.5 | chair course PoF |
| 3 rd quarter | 193580020 | Experimental Techniques in PoF (Gomez/Huisman)) | 5.0 | track course PoF |
| | 193400121 | Nano-Fluidics (Siretanu/Eijkel) | 5.0 | track course NI, PCF |
| | 201400194 | Granular Matter (v.d. Meer/Luding) | 5.0 | chair course PoF |
| | 193542070 | Medical Acoustics (Versluis) | 5.0 | chair course PoF |
| 4 th quarter | 201400195 | Fluids and Elasticity (Snoeijer) | 2.5 | chair course PoF |
| | 193565000 | Capillarity Phenomena (Mugele) | 5.0 | track course |
| - | 201300137 | Ions and Devices (Lemay) | 5.0 | chair course NI |
| | 193565900 | Capita Selecta PCF (Mugele)* | 5.0 | chair course PCF |
| | 201100190 | Capita Selecta NI (Lemay)* | 5.0 | chair course NI |

Materials Physics Track

| | Code | Course | EC | |
|-------------------------|-----------|---|-----|--------------------------|
| 1 st quarter | 193510040 | Theoretical Solid State Physics (Kelly) | 5.0 | track course |
| | 193530000 | Intr. to Superconductivity (Dhalle/Hilgenkamp/ Golubov/Brinkman) | 5.0 | chair course ICE/QTM/EMS |
| | 193570010 | Advanced Fluid Mechanics (Lohse/Gelderblom) | 5.0 | track course EMS |
| 2 nd quarter | 193550020 | Surfaces and Thin Layers (Wormeester/Zandvliet/Sturm) | 5.0 | track course |
| | 201100214 | Applications of Superconductivity (Dhalle/ten Kate) | 5.0 | chair course EMS |
| | 193510020 | Electronic Structure Theory I (Kelly) | 5.0 | chair course CMS |
| | 201500167 | Modern Topics in Condensed Matter Physics (MTCMP) (van Houselt/Kooij/Wormeester/Zandvliet) | 5.0 | chair course PIN |
| 3 rd quarter | 193530010 | Nanophysics (Zandvliet/Brocks/Golubov) | 5.0 | track course |
| | 193530020 | Advanced Materials (Kooij/Brocks) | 5.0 | track course |
| | 193510030 | Electronic Structure Theory II (Brocks) | 5.0 | chair course CMS |
| 4 th quarter | 201100146 | Cryogenic Science and Technology (ter Brake) | 5.0 | chair course EMS |

Optics and Biophysics Track

| | Code | Course | EC | |
|-------------------------|-----------|---|-----|----------------------|
| 1 st quarter | 201300139 | Laser physics (Boller/Bastiaens) | 5.0 | track course |
| | 193515000 | Quantum Optics (Pinkse) | 5.0 | track course |
| | 193400131 | Nano-Optics (Garcia-Blanco) | 5.0 | chair course OS |
| | 193640020 | Biophysical Techniques and Mol. Imaging (Otto/Blum) | 5.0 | chair course NBP |
| | 193510040 | Theoretical Solid State Physics (Kelly) | 5.0 | chair course CCP |
| | 191411291 | Applied Quantum Mechanics (Kelly/Verschuur) | 5.0 | chair course CCP |
| | 201300135 | Soft and Biological Matter (Lemay) | 5.0 | chair course NBP/CCP |
| 2 nd quarter | 193640080 | Biophysics (Claessens) | 5.0 | chair course NBP |
| | 201100074 | Nanophotonics (Vos/Pinkse/Legendijk) | 5.0 | chair course COPS |
| | 193520030 | Nonlinear Optics (Boller/van der Slot) | 5.0 | chair course LPNO |
| | 201400281 | Adv. Medical Imaging & Therapy Systems (Manohar) | 5.0 | chair course BMPI |
| | 193570050 | Advanced Quantum Mechanics (Brocks) | 5.0 | chair course CCP |
| 3 rd quarter | 201300141 | Wave Optics (vd Slot) | 5.0 | track course |
| | 201400196 | Quantum Emitters (Vos/Blum/Ctistis) | 5.0 | track course |
| | 191210880 | Integrated Optics (Garcia Blanco) | 5.0 | chair course OS |
| | 193400111 | Bionanotechnology (Bennink) | 5.0 | chair course NBP |
| | 201700176 | Computational Physics 1 | 2.5 | chair course CCP |
| | 201700177 | Computational Physics 2 | 2.5 | chair course CCP |
| 4 th quarter | 193500000 | Biomedical Optics (Vellekoop) | 5.0 | chair course BMPI |
| - | 193520040 | Exp. Laser Physics and Nonlinear Optics (Bastiaens/Offerhaus)* | 5.0 | chair course OS/LPNO |
| | 201100075 | Nanophotonic Experiments (Vos/Pinkse)* | 5.0 | chair course COPS |

* Students who want to participate in this course, please contact the teaching staff.

Programme Elective courses Applied Physics 2017/2018

The curriculum of Applied Physics contains 20 EC elective courses. The elective courses can be compulsory track courses or chair specific courses of another research group or track, listed in the Applied Physics Master Programme. The elective courses can be courses of other departments (see website of this department) or extra courses given by Applied Physics listed below. The curriculum of Applied Physics contains for every research group a list of recommended elective courses. The recommended courses of other departments are also listed below. For these students who want to extend the Internship to 30 EC, the 10 EC elective courses free can be used.

Capita Selecta courses are for activities done in the chair not belonging to regular courses. The content, form and size is in agreement with the chair. There is a special [registration form](#) where beside course code, name, and EC, the subject, the material used, the assessment and a title is registered. The title is visible on the certificate supplement.

| | Code | Course | EC |
|-------------------------|-----------|--|-----|
| 1 st quarter | 191411291 | Applied Quantum Mechanics (Kelly/Verschuur) | 5.0 |
| | 193700010 | AMM - Characterization (Huijser) | 5.0 |
| | 193640060 | Radiation Expertise (v. Dijk)* | 5.0 |
| | 201600019 | Energy Conversion Technology (Pozarlik, Brem) | 5.0 |
| | 201600180 | Molecular Structure and Spectroscopy (Huijser)** | 2.5 |
| | 201700187 | Soft and Biological Techniques*** | 5.0 |
| 2 nd quarter | 193530040 | Introduction to High Energy Physics (v. Eijk) | 5.0 |
| | 193400141 | Nano-Electronics (v.d. Wiel) | 5.0 |
| | 201700026 | Electrical Power Engineering and System Integration (Dhalle) | 5.0 |
| | 193570050 | Advanced Quantum Mechanics (Brocks) | 5.0 |
| 3 rd quarter | 201400037 | Linear Solid Mechanics (Ellenbroek) | 5.0 |
| | 201700034 | Introduction to PDE | 5.0 |
| | | Nonlinear Dynamics (Meijer) | 5.0 |
| | 201700025 | Solar Energy | 5.0 |
| | | Energy Storage | 5.0 |
| 4 th quarter | 193570040 | Theory of General Relativity (Briels) | 5.0 |
| | 201500405 | Theory of Complex Functions | 3.0 |
| | 201700024 | Wind Energy | 5.0 |
| | 200900066 | Intr. to the Physics of Correlated Electrons (Golubov) | 5.0 |
| | 193720040 | Introduction to Computational Fluid Dynamics (Lammertink) | 5.0 |
| - | 191211000 | Advanced semiconductor devices (Salm)* | 5.0 |

* Language of instruction: Dutch; Students who want to participate in this course, please contact the teaching staff.

** Part of Module 09 AT Science (201700072)

*** Soft and Biological Techniques can only be done in combination with Soft and Biological Matter. It is open for master students when the maximum of student places for the minor participants is not reached. Please contact Michel Duits.