### Studies Plan

#### EDPY - Physics 2018-19

**Core courses**

<table>
<thead>
<tr>
<th>Courses</th>
<th>Language Code</th>
<th>Section</th>
<th>Teacher</th>
<th>Exam</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced biomedical imaging methods and instrumentation</td>
<td>E</td>
<td>PHYS-719</td>
<td>EDPY</td>
<td>Gruetter</td>
<td>Term paper</td>
</tr>
<tr>
<td>Advanced experimental methods in condensed matter and nanophysics</td>
<td>E</td>
<td>PHYS-630</td>
<td>EDPY</td>
<td>Kern</td>
<td>Oral</td>
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<tr>
<td>Advanced quantum field theory</td>
<td>E</td>
<td>PHYS-702</td>
<td>EDPY</td>
<td>Vichi</td>
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<tr>
<td>Advanced Topics in Quantum Sciences and Technologies</td>
<td>E</td>
<td>PHYS-744</td>
<td>EDPY</td>
<td>Brantut</td>
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<tr>
<td>Before and Behind the Standard Model</td>
<td>E</td>
<td>PHYS-746</td>
<td>EDPY</td>
<td>Wulzer</td>
<td>Oral</td>
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<tr>
<td>Conformal Field theory and Gravity</td>
<td>E</td>
<td>PHYS-739</td>
<td>EDPY</td>
<td>Augusto Penedones Fernandes Meineri</td>
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<tr>
<td>Control and Operation of Tokamaks (Tokamak Plasma Control)</td>
<td>E</td>
<td>PHYS-734</td>
<td>EDPY</td>
<td>Felici Moret</td>
<td>Oral presentation</td>
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<tr>
<td>Cosmology: Dark and Luminous Matters</td>
<td>E</td>
<td>PHYS-730</td>
<td>EDPY</td>
<td>Courbin Jablonka</td>
<td>Oral</td>
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<tr>
<td>Fundamentals of superresolution optical microscopy and Scanning Probe Microscopy</td>
<td>E</td>
<td>PHYS-631</td>
<td>EDPY</td>
<td>Sekatski</td>
<td>Multiple</td>
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<tr>
<td>Fusion and industrial plasma technologies</td>
<td>E</td>
<td>PHYS-632</td>
<td>EDPY</td>
<td>Alberti Duval Fasel Fasoli Hogge Howling Martin</td>
<td>Oral</td>
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<tr>
<td>Gauge Theories and the Standard Model</td>
<td>E</td>
<td>PHYS-741</td>
<td>EDPY</td>
<td>Rattazzi Wulzer</td>
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<tr>
<td>General aspects of the electronic structure of crystals</td>
<td>E</td>
<td>PHYS-636</td>
<td>EDPY</td>
<td>Yevtushynsky</td>
<td>Oral</td>
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<tr>
<td>Introduction to Frustrated Magnetism</td>
<td>E</td>
<td>PHYS-726</td>
<td>EDPY</td>
<td>Mila</td>
<td>Oral</td>
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<tr>
<td>Magnetic and semiconducting nanostructures</td>
<td>E</td>
<td>PHYS-627</td>
<td>EDPY</td>
<td>Butté Rusponi</td>
<td>Oral</td>
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</table>
Magnetic confinement
(Every 2 years / Next time: Fall 2018)
E  PHYS-731  EDPY  Fasoli  Oral  4
Graves
Loizu  
Cisquella  
Ricci  
Sauter  
Testa  
Tran

New Trends in Chiral Magnetism
(Only this year / MON 20.08.18 to FRI 24.08.18)
E  PHYS-803  EDPY  Various  Project report  2
lecturers

Parallel programming
(Every year / Next time: Fall 2018 (Block course))
E  PHYS-743  EDPY  Keller  Multiple  3
Richart

Plasma Diagnostics in Basic Plasma Physics Devices and
Tokamaks: from Principles to Practice
(Every 2 years / Next time: Spring 2020 (Block course))
E  PHYS-732  EDPY  Furno  Written  2
Labit  
Reimerdes

Plasma instabilities
(Every 2 years / Next time: Fall 2019)
E  PHYS-736  EDPY  Brunner  Multiple  4
Graves

Principles of Single Molecule Biophysics and its Applications
(Next time: From 08.10.2018 to 11.10.2018)
E  PHYS-804  EDPY  Bustamante  Oral presentation  1

Quantum Field Theory Methods in Gravity and Cosmology
(Every 2 years / Next time: Spring 2019)
E  PHYS-738  EDPY  Sibiryakov  Oral  2

Solid State Physics X: experimental techniques
(Every year / Next time: Spring 2019)
E  PHYS-616  EDPY  Crepaldi  Oral  3
Gaal  
Náfrádi  
Rønnow  
Zivkovic

Spin Dynamics
(Every year / Fall)
E  PHYS-745  EDPY  Ansermet  Oral  4
Various
lecturers

Ultrafast phenomena
(Every year / Fall)
E  PHYS-724  EDPY  Barillot  Oral presentation  4
Chergui

Using Mathematica to analyse and model experimental data
(Every year / Next time: Spring 2019 (Block course))
E  PHYS-625  EDPY  Stadelmann  Multiple  2

External courses

<table>
<thead>
<tr>
<th>Courses</th>
<th>Language Code</th>
<th>Section</th>
<th>Teacher</th>
<th>Exam</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>High energy and space astrophysics</td>
<td>E PHYS-708</td>
<td>EDPY</td>
<td>Neronov</td>
<td>Multiple</td>
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<tr>
<td>(UNiGe)</td>
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<tr>
<td>(Every year / Fall &amp; Spring (Full year))</td>
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<tr>
<td>Stellar evolution and nucleosynthesis (UNiGe)</td>
<td>E PHYS-709</td>
<td>EDPY</td>
<td>University of Geneva faculty members</td>
<td>Multiple</td>
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<td>(Every year / Fall &amp; Spring (Full year))</td>
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### Structure and evolution of galaxies (UNIGe)

*(Every year / Fall & Spring (Full year))*

<table>
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<tr>
<th>E</th>
<th>PHYS-710</th>
<th>EDPY</th>
<th>University of Geneva</th>
<th>Multiple</th>
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