# Studies Plan

## EDPO - Photonics 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>3D Printing with light</td>
<td>E</td>
<td>MICRO-722</td>
<td>Moser Psaltis</td>
<td>Oral</td>
<td>1</td>
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<tr>
<td>Deep Learning for Optical Imaging</td>
<td>E</td>
<td>MICRO-723</td>
<td>Bothani Psaltis</td>
<td>Multiple</td>
<td>2</td>
</tr>
<tr>
<td>Light sources: optical fiber and waveguide lasers</td>
<td>E</td>
<td>ENG-601(2)</td>
<td>Limberger</td>
<td>Oral presentation</td>
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<tr>
<td>Modern photovoltaic technologies</td>
<td>E</td>
<td>PHYS-609</td>
<td>Haug Nüesch Romanyuk</td>
<td>Oral presentation</td>
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<tr>
<td>Nanophotonics and plasmonics</td>
<td>E</td>
<td>PHYS-602</td>
<td>Martin</td>
<td>Oral presentation</td>
<td>3</td>
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<tr>
<td>Nonlinear fibre optics</td>
<td>E</td>
<td>PHYS-607</td>
<td>Thévenaz</td>
<td>Oral presentation</td>
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<tr>
<td>Nonlinear Optics</td>
<td>E</td>
<td>PHYS-608</td>
<td>Roke</td>
<td>Written</td>
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<tr>
<td>Nonlinear Spectroscopy</td>
<td>E</td>
<td>PHYS-610</td>
<td>Roke</td>
<td>Written</td>
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<tr>
<td>Optical Design</td>
<td>E</td>
<td>MICRO-627</td>
<td>Scharf</td>
<td>Written &amp; Oral</td>
<td>2</td>
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<tr>
<td>Optical fibers and fiber devices</td>
<td>E</td>
<td>ENG-602</td>
<td>Scharf</td>
<td>Written &amp; Oral</td>
<td>2</td>
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<tr>
<td>Optical Laboratories</td>
<td>E</td>
<td>MICRO-625</td>
<td>Scharf</td>
<td>Multiple</td>
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<tr>
<td>Optics and technology of liquid crystal displays</td>
<td>E</td>
<td>PHYS-611</td>
<td>Scharf</td>
<td>Oral</td>
<td>3</td>
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### Other doctoral courses (EDOC)

<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>Gruetter</td>
<td>Term paper</td>
<td>4</td>
</tr>
<tr>
<td>Advanced experimental methods in condensed matter and nanophysics</td>
<td>E</td>
<td>PHYS-630</td>
<td>Kern</td>
<td>Oral</td>
<td>2</td>
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</table>
Fundamentals of superresolution optical microscopy and Scanning Probe Microscopy
(Every year / Next time: Spring 2019)
E PHYS-631 EDPY Sekatski Multiple 2

Magnetic and semiconducting nanostructures
(Every 2 years / Next time: Spring 2020)
E PHYS-627 EDPY Butté Rusponi Oral 3

Optical MEMS and micro-optics
(November 12 to 15, 2018)
E MICRO-605 EDMI Ataman Herzig Oral 1

Principles and Practicals in X-Ray Scattering
(Next time to be confirmed)
E PHYS-622 EDPY Vacat Oral 4

Quantum Information Theory and Computation
(Next time: Fall 2018)
E COM-611 EDIC Macris Oral 4

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

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

Master courses

<table>
<thead>
<tr>
<th>Courses</th>
<th>Language Code</th>
<th>Section</th>
<th>Teacher</th>
<th>Exam</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Biomicroscopy I</td>
<td>E</td>
<td>MICRO-561</td>
<td>SV</td>
<td>Altug</td>
<td>During the semester</td>
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<tr>
<td>Biomicroscopy II</td>
<td>E</td>
<td>MICRO-562</td>
<td>SV</td>
<td>Altug Seitz</td>
<td>During the semester</td>
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<td>Electronic spectroscopy</td>
<td>E</td>
<td>CH-444</td>
<td>CGC</td>
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<td>Fundamentals of biomedical imaging</td>
<td>E</td>
<td>PHYS-438</td>
<td>PH</td>
<td>Gruetter</td>
<td>Written</td>
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<tr>
<td>Lasers: theory and modern applications</td>
<td>E</td>
<td>MICRO-422</td>
<td>MT</td>
<td>Kippenberg Moser</td>
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<td>Optical waves propagation</td>
<td>E</td>
<td>MICRO-567</td>
<td>MT</td>
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<td>Organic semiconductors</td>
<td>E</td>
<td>MSE-478</td>
<td>MX</td>
<td>Nüesch</td>
<td>Oral</td>
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<td>Photochemistry II</td>
<td>E</td>
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<td>CGC</td>
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<td>Photomedicine</td>
<td>E</td>
<td>CH-448</td>
<td>CGC</td>
<td>Moser</td>
<td>Oral</td>
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<td>Quantum optics and quantum information</td>
<td>E</td>
<td>PHYS-454</td>
<td>PH</td>
<td>Dupertuis</td>
<td>Oral</td>
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<tr>
<td>Selected topics in advanced optics</td>
<td>E</td>
<td>MICRO-420</td>
<td>MT</td>
<td>Martin</td>
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