# Studies Plan

**EDCH - Chemistry and Chemical Engineering 2019-20**

<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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</thead>
<tbody>
<tr>
<td>Advanced Solid State and Surface Characterization</td>
<td>CH-633</td>
<td>EDC</td>
<td>Mensi Oveis Oveis Oveis Schouwink</td>
<td>Oral, Written</td>
<td>4</td>
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<tr>
<td>Basic and advanced NMR - Level 1 A (EPFL)</td>
<td>CH-601(x)</td>
<td>EDC</td>
<td>Bornet Emsley Stevanato</td>
<td>Oral</td>
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<td>Basic and advanced NMR - Level 1 B (Sion)</td>
<td>CH-601(y)</td>
<td>EDC</td>
<td>Abriata Bornet Emsley Stevanato</td>
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<tr>
<td>Basic and advanced NMR - Level 2 (EPFL)</td>
<td>CH-703</td>
<td>EDC</td>
<td>Diviani Hummler Beermann Kellenberger</td>
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<td>Basic principles of drug action at the cardiovascular system</td>
<td>CH-602</td>
<td>EDC</td>
<td>Diviani Hummler Beermann Kellenberger</td>
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<td>Basic principles of drug action at the nervous system</td>
<td>CH-603</td>
<td>EDC</td>
<td>Katanaev Kellenberger</td>
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<tr>
<td>Challenges and Opportunities in Energy Research</td>
<td>CH-803</td>
<td>EDC</td>
<td>Buonsanti Various lecturers</td>
<td>Written &amp; Oral</td>
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<td>Chemical Probes for Imaging in Biology</td>
<td>CH-634</td>
<td>EDC</td>
<td>Johnsson</td>
<td>Oral presentation</td>
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<tr>
<td>Chemosensory receptors: Applications for biosensors and medical therapies</td>
<td>CH-628</td>
<td>EDC</td>
<td>Pick</td>
<td>Oral</td>
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<tr>
<td>Colloidal synthesis of nanoparticles and their energy applications</td>
<td>CH-604</td>
<td>EDC</td>
<td>Buonsanti Loiudice</td>
<td>Oral</td>
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<tr>
<td>Current Topics in Chemical Biology 1</td>
<td>CH-629(1)</td>
<td>EDC</td>
<td>Fierz Heinis Vacat</td>
<td>Written</td>
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<tr>
<td>Current Topics in Chemical Biology 2</td>
<td>CH-629(2)</td>
<td>EDC</td>
<td>Fierz Heinis Vacat</td>
<td>Written</td>
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<tr>
<td>Efficient Synthetic Routes Towards Bioactive Molecules</td>
<td>CH-620</td>
<td>EDC</td>
<td>Cramer</td>
<td>Multiple</td>
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</table>
### Frontiers in Chemical Synthesis. Towards Sustainable Chemistry
(Next time: Spring 2020)
- E CH-707 EDCH Hu Waser Multiple 2

### Frontiers in Organic Synthesis. Part III Stereochemistry
(Next time: Spring 2022)
- E CH-709 EDCH Hu Waser Multiple 2

### Frontiers in Organic Synthesis. Part II Synthesis of carbon- and hetero-cycles
(Next time: Spring 2021)
- E CH-708 EDCH Hu Waser Multiple 2

### Gene transfer and recombinant protein expression in animal cells
(Postponed)
- E CH-710 EDCH Hacker Pick Oral presentation 2

### Highlights in Energy Research: Characterization of materials for sustainable energy (1)
(Every 3 years. Next time: Fall 2020)
- E CH-607(1) EDCH Queen Term paper 1

### Highlights in Energy Research: Characterization of materials for sustainable energy (2)
(Every 3 years. Next time: Spring 2021)
- E CH-607(2) EDCH Queen Term paper 1

### Highlights in Energy Research: Sustainable energy applications and devices (1)
(Every 3 years. Next Time Fall 2021)
- E CH-608(1) EDCH Queen Term paper 1

### Highlights in Energy Research: Sustainable energy applications and devices (2)
(Every 3 years. Next time: Spring 2022)
- E CH-608(2) EDCH Queen Term paper 1

### Highlights in Energy Research: Synthesis and design of materials for sustainable energy (1)
(Every 3 years. Next time: Fall 2019)
- E CH-609(1) EDCH Queen Term paper 1

### Highlights in Energy Research: Synthesis and design of materials for sustainable energy (2)
(Every 3 years. Next time: Spring 2020)
- E CH-609(2) EDCH Queen Term paper 1

### Information literacy for chemists
(Next time: Fall 2019)
- E ENG-619 EDCH Borel Project report 0

### Inorganic chemistry "Applications and spin-offs"
(Next time: Fall semester 2020)
- E CH-711 EDCH Dyson Mazzanti Severin Oral presentation 2

### Inorganic chemistry "Fundamentals and properties"
(Next time: Fall semester 2019)
- E CH-610 EDCH Dyson Mazzanti Severin Oral presentation 2

### Inorganic chemistry "Techniques and methods"
(Next time: Fall semester 2021)
- E CH-611 EDCH Dyson Mazzanti Severin Oral presentation 2

### Interfacial Electrochemistry of Metals and Semiconductors for Energy Conversion and Storage 1- Basic concepts
(Spring semester 2020)
- E CH-603(1) EDCH Hagfeldt Vlachopoulos Multiple,Written 4

### Interfacial Electrochemistry of Metals and Semiconductors for Energy Conversion and Storage 2- Advanced Topics
(Every year)
- E CH-603(2) EDCH Hagfeldt Vlachopoulos Multiple,Written 4

### Leading research in Chemical Engineering (1)
Leading research in Chemical Engineering (2)
(Next time: Spring 2020)
E ChE-601(2) EDCH Luterbacher Vacat Term paper 1

Mass spectrometry, principles and applications
(Next course Fall 2020)
E CH-728 EDCH Boyarkine Gasilova Gasiolova Menin Ortiz Trujillo Paliny Oral 3

Medicinal chemistry: concepts and case studies from the pharmaceutical industry
(Spring 2020 from: 2.02 to: 16.02)
E CH-604 EDCH Quancard Oral 1

Perspectives in Modern Organic Chemistry (OCS) 1
(Next time: Fall semester 2019)
E CH-621(1) EDCH Cramer Vacat Zhu Oral 1

Perspectives in Modern Organic Chemistry (OCS) 2
(Next time: Spring 2020)
E CH-621(2) EDCH Cramer Vacat Zhu Oral 1

Principles and Applications of X-ray Diffraction
(Next time: Winter 2020)
E CH-632 EDCH Schouwink Oral 2

Scientific Writing (3) (Sion)
(postponed until: Fall 2019) (Block)
E ENG-613(3) EDCH Bless Project report 1

Scientific Writing (EDCH) (1) (Fall)
(Next time: Fall 2019 (Block))
E ENG-613(1) EDCH Bless Project report 1

Scientific Writing (EDCH) (2) (Spring)
(Next time: Spring 2020)
E ENG-613(2) EDCH Bless Project report 1

Seminars in Physical Chemistry (1)
(Next time: Fall semester 2019)
E CH-630(1) EDCH Drabbels Lorenz Vacat Term paper 1

Seminars in Physical Chemistry (2)
(Next time: Spring semester 2020)
E CH-630(2) EDCH Drabbels Lorenz Vacat Term paper 1

Synergism between Art of Total Synthesis and High Level Strategic Design (MOM)
(Next time: Summer 2020)
E CH-622 EDCH Zhu Multiple 2

Theory of nonlinear electronic and electronic-vibrational spectroscopies
(Fall 2019)
E CH-621 EDCH Vanicek Yoshitaka Term paper 1

Other doctoral courses (EDOC)

Courses

<table>
<thead>
<tr>
<th>Language Code</th>
<th>Section</th>
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<tbody>
<tr>
<td>ChE-601</td>
<td>EDCH</td>
<td>Borel Panes</td>
<td>Project report</td>
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<td>Varrato</td>
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### Solar photovoltaics and energy systems
*(next time Spring 2020)*

<table>
<thead>
<tr>
<th>E</th>
<th>ChE-600</th>
<th>EDEY</th>
<th>Guijarro Carratala</th>
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C : Courses, E : Exercise, P : Pratic courses, * : option courses / F : French courses, D : Deutsch courses, E : English Courses / Sum : Summer, Win : Winter