## Studies Plan

### EDMi - Microsystems and Microelectronics 2019-20

### Core Courses

<table>
<thead>
<tr>
<th>Courses</th>
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</table>
| **Advanced analog IC design**  
(August 26 to 30, 2019) |
| E MICRO-700 | EDMI | Kayal | Written & Oral | 2 |
| **Advanced topics in micro- and nanomanufacturing: top-down meets bottom-up**  
(Every 2 years. Next time: 02.09.2019 -06.09.2019) |
| E MICRO-724 | EDMI | Brugger  
Invited lecturers | Multiple | 2 |
| **Electrochemical nano-bio-sensing and bio/CMOS interfaces**  
(Next time 15.06.2020 to 19.06.2020 Online) |
| E MICRO-614 | EDMI | Carrara | Project report | 1 |
| **Energy Autonomous Wireless Smart Systems**  
(February 10 to 14, 2020. Examination March 30, 2020 (pm).) |
| E MICRO-617 | EDMI | Burg  
Dehollain  
Maloberti  
Skrivervik  
Favre | Multiple | 3 |
| **Highlights in microtechnology**  
(Next time: June 2 - 12, 2020 (exam on June 18) This course will take place ONLINE.) |
| E MICRO-607 | EDRS | Giovannini  
Various lecturers | Written | 4 |
| **IC design for robustness**  
(August 26 to 30, 2019) |
| E MICRO-704 | EDMI | Kayal | Written & Oral | 2 |
| **IMT Distinguished Lecture Series 2020**  
(Next time: 17.02.2020 to 14.12.2020) |
| E MICRO-630 | EDMI | Carrara  
Quack  
Shea | Oral | 1 |
| **Introduction to Finite Element Modelling in Microsystems**  
(From: 22.08.2019 to: 23.08.2019) |
| E MICRO-628 | EDMI | Quack | Oral presentation | 1 |
| **Low-voltage analog CMOS IC design**  
(Next time in June 2020) |
| E MICRO-705 | EDMI | Kayal | Written & Oral | 2 |
| **Microfluidics for lab-on-a-chip**  
(Next time Spring 2020: From 21 to 23 April) |
| E MICRO-706 | EDMI | Le Gac  
de Malsche | Term paper | 1 |
| **Micro-magnetic field sensors and actuators**  
(Next time in June 2020) |
| E MICRO-602 | EDMI | Boero | Oral | 1 |
| **Microstructuring of glass**  
(Next time in Spring 2021) |
| E MICRO-707 | EDMI | Gijs  
Parashar | Oral | 1 |
| **Modelling micro-/nano- field effect electron devices**  
(Next time in June 2020) |
| E MICRO-623 | EDMI | Sallese | Written | 1 |
| **MOOC: Micro and Nanofabrication (MEMS)**  
(September 18 to November 16, 2019) |
| E MICRO-621 | EDMI | Brugger  
Gijs | Oral | 1 |
<table>
<thead>
<tr>
<th>Course Title</th>
<th>Code</th>
<th>Type</th>
<th>Instructor(s)</th>
<th>Format</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Nanoscale MOSFETs and beyond CMOS devices</td>
<td>MICRO-611</td>
<td>EDMI</td>
<td>Fernandez-Bola, Badia, Ionescu</td>
<td>Oral</td>
<td>1</td>
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<tr>
<td>Optical MEMS and micro-optics</td>
<td>MICRO-605</td>
<td>EDMI</td>
<td>Ataman, Herzig</td>
<td>Oral</td>
<td>1</td>
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<td>PLLs and clock &amp; data recovery</td>
<td>MICRO-710</td>
<td>EDMI</td>
<td>Kayal</td>
<td>Written &amp; Oral</td>
<td>2</td>
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<td>Power management</td>
<td>MICRO-709</td>
<td>EDMI</td>
<td>Kayal</td>
<td>Written &amp; Oral</td>
<td>2</td>
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<td>Scaling in MEMS</td>
<td>MICRO-606</td>
<td>EDMI</td>
<td>Renaud, Shea</td>
<td>Oral presentation</td>
<td>1</td>
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<td>Soft Microsystems Processing and Devices</td>
<td>MICRO-618</td>
<td>EDMI</td>
<td>Briand, Brugger, Lacour, Leterrier, Shea</td>
<td>Oral</td>
<td>2</td>
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<td>Techniques for Handling Noise and Variability in Analog Circuits</td>
<td>MICRO-720</td>
<td>EDMI</td>
<td>Kayal</td>
<td>Written</td>
<td>2</td>
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<td>Theoretical Microfluidics</td>
<td>MICRO-718</td>
<td>EDMI</td>
<td>Gijs, Lehnert</td>
<td>Oral</td>
<td>1</td>
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<tr>
<td>Wearables and implantables for personalized and preventive health care</td>
<td>MICRO-624</td>
<td>EDMI</td>
<td>Ionescu, Locca, Teyaera, Stahel</td>
<td>Written</td>
<td>2</td>
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