## Studies Plan

### EDMI - Microsystems and Microelectronics 2019-20

#### 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>
</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**  
Invited lecturers  
Mastrangeli  
Perez-Murano | Multiple | 2 |
| **Electrochemical nano-bio-sensing and bio/CMOS interfaces**  
(Next time in June 2020) | E | MICRO-614 | EDMI | Carrara | Project report | 1 |
| **Energy Autonomous Wireless Smart Systems**  
(February 10 to 14, 2020) | E | MICRO-617 | EDMI | Burg  
Dehollain  
Maloberti  
Skrivervik  
Favre | Multiple | 3 |
| **Highlights in microtechnology**  
(Next time: June 2-12, 2020 (exam on June 18)) | 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**  
(From 11.02 to 2.12.2019. SV1717 (live) & MC B0 302 (video)) | E | MICRO-626 | 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) | 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 | Sallesse | Written | 1 |
| **MOOC: Micro and Nanofabrication (MEMS)**  
(September 18 to November 16, 2019) | E | MICRO-621 | EDMI | Brugger  
Gijs | Oral | 1 |

C : Courses, E : Exercise, P : Pratic courses, * : option courses / F : French courses, D : Deutsch courses, E : English Courses / Sum : Summer, Win : Winter
<table>
<thead>
<tr>
<th>Course Title</th>
<th>Code</th>
<th>Type</th>
<th>Instructor(s)</th>
<th>Delivery Method</th>
<th>Duration</th>
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<tbody>
<tr>
<td>Nanoscale MOSFETs and beyond CMOS devices</td>
<td>MICRO-611</td>
<td>EDMI</td>
<td>Fernandez-Bolat, Badia, Ionescu</td>
<td>Oral</td>
<td>November 13 to 15, 2020</td>
</tr>
<tr>
<td>Optical MEMS and micro-optics</td>
<td>MICRO-605</td>
<td>EDMI</td>
<td>Ataman, Herzig</td>
<td>Oral</td>
<td>November 18 to 21, 2019</td>
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<tr>
<td>PLLs and clock &amp; data recovery</td>
<td>MICRO-710</td>
<td>EDMI</td>
<td>Kayal</td>
<td>Written &amp; Oral</td>
<td>June 2020</td>
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<tr>
<td>Power management</td>
<td>MICRO-709</td>
<td>EDMI</td>
<td>Kayal</td>
<td>Written &amp; Oral</td>
<td>August 26 to 30, 2019</td>
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<tr>
<td>Scaling in MEMS</td>
<td>MICRO-606</td>
<td>EDMI</td>
<td>Renaud, Shea</td>
<td>Oral presentation</td>
<td>August 20 &amp; 21, 2019</td>
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<tr>
<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>September 2020</td>
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<tr>
<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>January 20 to 24, 2020</td>
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<tr>
<td>Theoretical Microfluidics</td>
<td>MICRO-718</td>
<td>EDMI</td>
<td>Gijs, Lehnert</td>
<td>Oral</td>
<td>April 2021</td>
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<tr>
<td>Wearables and implantables for personalized and preventive healthcare</td>
<td>MICRO-624</td>
<td>EDMI</td>
<td>Ionescu, Locca, Tevarearai, Stahel</td>
<td>Written</td>
<td>February 3 to 7, 2020</td>
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</tbody>
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