# Studies Plan

EDIC - Computer and communication sciences 2023-24

## 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 logic synthesis and quantum computing</td>
<td>E</td>
<td>CS-724</td>
<td>De Micheli Soeken</td>
<td>Project report</td>
<td>2</td>
</tr>
<tr>
<td>Advanced Topics in Information Theory</td>
<td>E</td>
<td>COM-621</td>
<td>Gastpar Issa</td>
<td>Project report</td>
<td>2</td>
</tr>
<tr>
<td>Algorithmic Toolbox</td>
<td>E</td>
<td>CS-627</td>
<td>Svensson</td>
<td>Project report</td>
<td>2</td>
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<tr>
<td>Interactive Theorem Proving CS</td>
<td>E</td>
<td>CS-628</td>
<td>Barrière Pit-Claudel</td>
<td>During the semester</td>
<td>4</td>
</tr>
<tr>
<td>Privacy at the communication layer</td>
<td>E</td>
<td>CS-721</td>
<td>González Troncoso</td>
<td>Multiple</td>
<td>2</td>
</tr>
<tr>
<td>Project FALL</td>
<td>E</td>
<td>CS-699</td>
<td>Various lecturers</td>
<td>Project report</td>
<td>6</td>
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<tr>
<td>Project SPRING</td>
<td>E</td>
<td>CS-699</td>
<td>Various lecturers</td>
<td>Project report</td>
<td>6</td>
</tr>
<tr>
<td>Quantum Information Theory and Computation</td>
<td>E</td>
<td>COM-511</td>
<td>Macris</td>
<td>Oral</td>
<td>4</td>
</tr>
<tr>
<td>Topics in Computational Social Science (TopiCSS)</td>
<td>E</td>
<td>CS-727</td>
<td>West</td>
<td>Multiple</td>
<td>2</td>
</tr>
<tr>
<td>Topics in Machine Learning for Education</td>
<td>E</td>
<td>CS-702</td>
<td>Käser Jacober</td>
<td>Oral</td>
<td>2</td>
</tr>
<tr>
<td>Topics in Machine Learning Systems</td>
<td>E</td>
<td>CS-723</td>
<td>Falsafi Jaggi Kermarrec</td>
<td>Oral presentation</td>
<td>3</td>
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<tr>
<td>Topics in Natural Language Processing</td>
<td>E</td>
<td>CS-612</td>
<td>Bosselut Montariol</td>
<td>Oral</td>
<td>2</td>
</tr>
<tr>
<td>Topics on Datacenter Design</td>
<td>E</td>
<td>CS-728</td>
<td>Falsafi Kermarrec</td>
<td>Oral</td>
<td>2</td>
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<tr>
<td>Transfer learning and meta-learning</td>
<td>E</td>
<td>CS-625</td>
<td>Brbic</td>
<td>Oral</td>
<td>2</td>
</tr>
</tbody>
</table>

Other doctoral courses (EDOC)

### Courses

<table>
<thead>
<tr>
<th>Language Code</th>
<th>Section</th>
<th>Teacher</th>
<th>Exam</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>ENG-704</td>
<td>EDEE</td>
<td>Autre (reprise)</td>
<td>2</td>
</tr>
</tbody>
</table>

**EECS Seminar: Advanced Topics in Machine Learning**

(Next time: Spring 2024)

- Bosselut
- Cevher
- Faltings
- Flammarion
- Frossard
- West

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**Lecture series on scientific machine learning**

(Next time: Fall 2024)

- Carleo
- Ceriotti
- De Los Rios
- Mathis
- Schwaller
- Wyart
- Zdeborová

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**Online learning in games**

(Next time: Spring 2025)

- Cevher

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**Master courses**

<table>
<thead>
<tr>
<th>Language Code</th>
<th>Section</th>
<th>Teacher</th>
<th>Exam</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>E</td>
<td>CS-471</td>
<td>IN</td>
<td>During the semester</td>
<td>6</td>
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</table>

**Advanced multiprocessor architecture**

- Falsafi

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**Advanced probability and applications**

- Shkel

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**Advanced topics on privacy enhancing technologies**

- González
- Troncoso

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**Algorithms II**

- Svensson

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**Cryptography and security**

- Vaudenay

---

**Design technologies for integrated systems**

- De Micheli

---

**Distributed algorithms**

- Guerraoui

---

**Formal verification**

- Kuncak

---

**Foundations of Data Science**

- Gastpar
- Urbanke

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**Information security and privacy**

- Payer

---

**Information theory and coding**

- Telatar

---

**Intelligent agents**

- Faltings

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**Machine learning**

- Flammari
- Jaggi

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**Mathematical foundations of signal processing**

- Written

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**Modern natural language processing**

- Bosselut

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<table>
<thead>
<tr>
<th>Course Title</th>
<th>Code</th>
<th>Instructor(s)</th>
<th>Delivery Method</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principles of computer systems</td>
<td>CS-522</td>
<td>Argyraki Candea</td>
<td>During the semester</td>
<td>8</td>
</tr>
<tr>
<td>Systems for data management and data science</td>
<td>CS-460</td>
<td>Ailamaki Kermarrec</td>
<td>Written</td>
<td>8</td>
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