

Studies Plan

EL Micro- and Nanotechnologies for Integrated Systems 2025-26

Block 1

| Courses |                                            |       |                                                 | Master 1       |    |   |   |   | Master 2 |   |   |   |   | Master 3 |   |    |    |   | Master 4 |   |   |     |                     | Exam Session | Exam | Credit |
|---------|--------------------------------------------|-------|-------------------------------------------------|----------------|----|---|---|---|----------|---|---|---|---|----------|---|----|----|---|----------|---|---|-----|---------------------|--------------|------|--------|
| Lang.   | Code                                       | Sect. | Teacher                                         | Specialization | En | L | T | P | I        | C | E | L | T | P        | I | C  | E  | L | T        | P | I |     |                     |              |      |        |
| E       | Analog circuit design II (for MNIS)        |       |                                                 |                |    |   |   |   |          |   |   |   |   |          |   |    |    |   |          |   |   |     |                     |              |      |        |
| E       | EE-435                                     | EL    | Koukab                                          |                |    |   |   |   |          |   |   |   |   |          |   | 2h | 1h |   | 1h       |   |   | Win | Written             | 4            |      |        |
| E       | Design technologies for integrated systems |       |                                                 |                |    |   |   |   |          |   |   |   |   |          |   |    |    |   |          |   |   |     |                     |              |      |        |
| E       | CS-472                                     | IN    | De Micheli<br>Mallasen<br>Quintana<br>Schiavone |                |    |   |   |   |          |   |   |   |   |          |   | 3h | 2h |   |          |   |   | Win | During the semester | 6            |      |        |
| E       | Digital systems design                     |       |                                                 |                |    |   |   |   |          |   |   |   |   |          |   |    |    |   |          |   |   |     |                     |              |      |        |
| E       | EE-334                                     | EL    | Burg                                            |                |    |   |   |   |          |   |   |   |   |          |   | 2h | 2h |   |          |   |   | Win | Written             | 4            |      |        |
| E       | Fundamentals of VLSI design                |       |                                                 |                |    |   |   |   |          |   |   |   |   |          |   |    |    |   |          |   |   |     |                     |              |      |        |
| E       | EE-429                                     | EL    | Burg<br>Levisse                                 |                |    |   |   |   |          |   |   |   |   |          |   | 3h | 1h |   | 2h       |   |   | Win | Written             | 6            |      |        |

Block 2

| Courses |                                           |       |         | Master 1       |    |   |   |   | Master 2 |   |   |   |   | Master 3 |   |   |   |   | Master 4 |   |   |     |                     | Exam Session | Exam | Credit |
|---------|-------------------------------------------|-------|---------|----------------|----|---|---|---|----------|---|---|---|---|----------|---|---|---|---|----------|---|---|-----|---------------------|--------------|------|--------|
| Lang.   | Code                                      | Sect. | Teacher | Specialization | En | L | T | P | I        | C | E | L | T | P        | I | C | E | L | T        | P | I |     |                     |              |      |        |
| E       | Nanoelectronics                           |       |         |                |    |   |   |   |          |   |   |   |   |          |   |   |   |   |          |   |   | Win | Written             | 2            |      |        |
|         | EE-535                                    | EL    | Ionescu |                |    |   |   |   |          |   |   |   |   |          |   |   |   |   |          |   |   |     |                     |              |      |        |
| E       | Physical models for micro and nanosystems |       |         |                |    |   |   |   |          |   |   |   |   |          |   |   |   |   |          |   |   | Win | During the semester | 2            |      |        |
|         | EE-536                                    | EL    | Kis     |                |    |   |   |   |          |   |   |   |   |          |   |   |   |   |          |   |   |     |                     |              |      |        |
| E       | Test of VLSI systems                      |       |         |                |    |   |   |   |          |   |   |   |   |          |   |   |   |   |          |   |   | Win | Written             | 2            |      |        |
|         | EE-530                                    | EL    | Schmid  |                |    |   |   |   |          |   |   |   |   |          |   |   |   |   |          |   |   |     |                     |              |      |        |

Group 1

| Courses |                                                    |       |           | Master 1       |    |   |   |   | Master 2 |   |   |   |   | Master 3 |   |       |   |   | Master 4 |   |   |   |   | Exam Session | Exam                | Credit |   |
|---------|----------------------------------------------------|-------|-----------|----------------|----|---|---|---|----------|---|---|---|---|----------|---|-------|---|---|----------|---|---|---|---|--------------|---------------------|--------|---|
| Lang.   | Code                                               | Sect. | Teacher   | Specialization | En | L | T | P | I        | C | E | L | T | P        | I | C     | E | L | T        | P | I | C | E |              |                     |        | L |
| E       | Fundamentals of biosensors and electronic biochips |       |           |                |    |   |   |   |          |   |   |   |   |          |   |       |   |   |          |   |   |   |   |              |                     |        |   |
| E       | EE-515                                             | EL    | Guiducci  |                |    |   |   |   |          |   |   |   |   |          |   | 2h 1h |   |   |          |   |   |   |   | Win          | Written             | 3      |   |
| E       | Mathematics of data: from theory to computation    |       |           |                |    |   |   |   |          |   |   |   |   |          |   |       |   |   |          |   |   |   |   |              |                     |        |   |
| E       | EE-556                                             | EL    | Cevher    |                |    |   |   |   |          |   |   |   |   |          |   | 3h    |   |   | 3h       |   |   |   |   | Win          | Written             | 6      |   |
| E       | Optical detectors                                  |       |           |                |    |   |   |   |          |   |   |   |   |          |   |       |   |   |          |   |   |   |   |              |                     |        |   |
| E       | MICRO-523                                          | MT    | Bruschini |                |    |   |   |   |          |   |   |   |   |          |   | 2h 1h |   |   |          |   |   |   |   | Win          | Oral                | 3      |   |
| E       | Radio frequency circuits design techniques         |       |           |                |    |   |   |   |          |   |   |   |   |          |   |       |   |   |          |   |   |   |   |              |                     |        |   |
| E       | EE-426                                             | EL    | Ruffieux  |                |    |   |   |   |          |   |   |   |   |          |   | 2h 2h |   |   |          |   |   |   |   | Win          | Written             | 4      |   |
| E       | Semiconductor devices I                            |       |           |                |    |   |   |   |          |   |   |   |   |          |   |       |   |   |          |   |   |   |   |              |                     |        |   |
| E       | EE-557                                             | EL    | Matioli   |                |    |   |   |   |          |   |   |   |   |          |   | 3h 1h |   |   |          |   |   |   |   | Win          | During the semester | 4      |   |
|         | Seminar in physiology and instrumentation          |       |           |                |    |   |   |   |          |   |   |   |   |          |   |       |   |   |          |   |   |   |   |              |                     |        |   |
|         | MICRO-568                                          | MT    | Radenovic |                |    |   |   |   |          |   |   |   |   |          |   | 2h    |   |   |          |   |   |   |   | Win          | Written             | 2      |   |
| E       | Wireless receivers: algorithms and architectures   |       |           |                |    |   |   |   |          |   |   |   |   |          |   |       |   |   |          |   |   |   |   |              |                     |        |   |
| E       | EE-442                                             | EL    | Burg      |                |    |   |   |   |          |   |   |   |   |          |   | 2h 2h |   |   |          |   |   |   |   | Win          | During the semester | 4      |   |

Master project

| Courses |                                                                                                                |       |                 | Master 1       |     |    |   |   | Master 2 |   |   |   |   | Master 3 |   |   |   |   | Master 4 |   |   |   |      | Exam Session | Exam                  | Credit |   |   |
|---------|----------------------------------------------------------------------------------------------------------------|-------|-----------------|----------------|-----|----|---|---|----------|---|---|---|---|----------|---|---|---|---|----------|---|---|---|------|--------------|-----------------------|--------|---|---|
| Lang.   | Code                                                                                                           | Sect. | Teacher         | Specialization | Cat | En | L | T | P        | I | C | E | L | T        | P | I | C | E | L        | T | P | I | C    | E            | L                     | T      | P | I |
|         | <b>MNIS Master project for students from Grenoble</b>                                                          |       |                 |                |     |    |   |   |          |   |   |   |   |          |   |   |   |   |          |   |   |   |      |              |                       |        |   |   |
|         | EE-599(b)                                                                                                      | EL    | Profs<br>divers |                |     |    |   |   |          |   |   |   |   |          |   |   |   |   |          |   |   |   |      | 420h         |                       |        |   |   |
|         | <b>MNIS Master project for students from Torino</b>                                                            |       |                 |                |     |    |   |   |          |   |   |   |   |          |   |   |   |   |          |   |   |   |      |              |                       |        |   |   |
|         | EE-599(c)                                                                                                      | EL    | Profs<br>divers |                |     |    |   |   |          |   |   |   |   |          |   |   |   |   |          |   |   |   |      | 420h         |                       |        |   |   |
|         | <b>Engineering internship credited with master project (master in Electrical and Electronical engineering)</b> |       |                 |                |     |    |   |   |          |   |   |   |   |          |   |   |   |   |          |   |   |   |      |              |                       |        |   |   |
| F       | EE-597(a)                                                                                                      | EL    | Profs<br>divers |                |     |    |   |   |          |   |   |   |   |          |   |   |   |   |          |   |   |   | 320h | Win          | During the 0 semester |        |   |   |