# M2 QLMN- Track « Nanodevices and Technologies"

## Labworks (6 ECTS)

|                                   |      | Track* | Localisation | Hours   |
|-----------------------------------|------|--------|--------------|---------|
| Lab works:                        | 6    | CM/ND  | UFR, UVSQ,   | 60 h TP |
| - Microscopy and spectroscopy     | ECTS |        | ENS, IPP,    |         |
| -Fabrication and Characterization |      |        | IOGS, CS,    |         |
| of Nanodevices and Nano-objects   |      |        | Thales       |         |

## Core UE (9 UE =27 ECTS)

|                                  |        | Track* | Localisation | Hours     |
|----------------------------------|--------|--------|--------------|-----------|
| Microscopy and spectroscopy      | 3 ECTS | CM/ND  | UFR          | 30 h exam |
|                                  |        |        |              | included  |
| Solid states devices             | 3 ECTS | CM/ND  | UFR          | 30 h exam |
|                                  |        |        |              | included  |
| Fundamentals of Micro and        | 3 ECTS | CM/ND  | UFR          | 30 h exam |
| Nanofabrication                  |        |        |              | included  |
| Advanced micro and               | 3 ECTS | ND     | UFR          | 30 h exam |
| nanofabrication                  |        |        |              | included  |
| Integrated optics and            | 3 ECTS | CM/ND  | UFR          | 30 h exam |
| Nanophotonics                    |        |        |              | included  |
| Physics of MEMS                  | 3 ECTS | ND     | UFR          | 30 h exam |
|                                  |        |        |              | included  |
| Micro and nanodevice for biology | 3 ECTS | ND     | UFR          | 30 h exam |
| and diagnostic                   |        |        |              | included  |
| Applied magnetic materials for   | 3 ECTS | ND     | UFR          | 30 h exam |
| spintronics and information      |        |        |              | included  |
| technologies                     |        |        |              |           |
| Nanoelectronics and molecular    | 3 ECTS | CM/ND  | UFR          | 30 h exam |
| electronics                      |        |        |              | included  |

#### **Electives UE (2UE = 6 ECTS)**

#### (you have to choose 2 UE among the list below)

|                                   |        | Track* | Localisation | Hours        |
|-----------------------------------|--------|--------|--------------|--------------|
| Optoelectronics                   | 3 ECTS | ND     | UFR          | 30 h exam    |
|                                   |        |        |              | included     |
| Composants semi-conducteurs       | 3 ECTS | ND     | UFR          | 30 h exam    |
| THz (en français)                 |        |        |              | included     |
| Nanomedicine and                  | 3 ECTS | ND     | UFR          | 30 h Project |
| nanotoxicology                    |        |        | Pharma       | _            |
| Circuit nanoarchitecture and deep | 3 ECTS | ND     | UFR          | 30 h exam    |
| learning                          |        |        |              | included     |

\* LM=Light and Matter ; CM = Condensed Matter and its Interfaces ; ND = Nanodevices and Technologies

| Technological project           | 3 ECTS | CM/ND   | UFR,      | 30 h Project |
|---------------------------------|--------|---------|-----------|--------------|
|                                 |        |         | UVSQ,     |              |
|                                 |        |         | ENS       |              |
| Research project                | 3 ECTS | CM/ND   | UFR,      | 30 h Project |
|                                 |        |         | UVSQ,     |              |
|                                 |        |         | ENS, IPP, |              |
|                                 |        |         | IOGS, CS, |              |
|                                 |        |         | Thales    |              |
| Quantum technologies:           | 3 ECTS | LM/CM/N | CS        | 30 h exam    |
| communication, computing and    |        | D       |           | included     |
| sensors                         |        |         |           |              |
| Physics experiments in Quantum  | 3 ECTS | LM/CM/N | IOGS      | 30 h exam    |
| Technologies                    |        | D       |           | included     |
| Other UE from "Light Matter" or | 3 ECTS | -       | -         | -            |
| "Condensed matter" track        |        |         |           |              |