## MASTER'S DEGREE IN ELECTRONIC ENGINEERING FOR INTELLIGENT VEHICLES

https://corsi.unipr.it/en/cdlm-eeiv

### CALENDARIO ACCADEMICO A.A 2026/2027

**Le lezioni e gli esami del primo anno si svolgono presso l'Università di Bologna.**

Il calendario didattico è consultabile al link

https://corsi.unibo.it/2cycle/ElectronicEngineeringIntelligentVehicles/academic-calendar

**Le lezioni e gli esami del secondo anno del Corso in "Electronic Engineering for Intelligent Vehicles" curriculum "Electronic and Communication System" (ECS) si svolgono presso l'Università di Modena e Reggio Emilia.** Il calendario didattico è consultabile al link

https://www.ingmo.unimore.it/it/didattica/organizzazione-didattica/calendario-delle-attivita-didattiche

**Le lezioni e gli esami del secondo anno del Corso in "Electronic Engineering for Intelligent Vehicles" curriculum "Autonomous Driving Engineering" (ADE) si svolgono presso l'Università di Parma.** Il calendario didattico è riportato a pagina 27.

### ACADEMIC CALENDAR 2026/2027

**First year curriculum ADE and ECS Università degli Studi di Bologna**

follow the link https://corsi.unibo.it/2cycle/ElectronicEngineeringIntelligentVehicles/academic-calendar

**Second year curriculum ECS Università degli Studi di Modena e Reggio**

follow the link https://corsi.unibo.it/2cycle/ElectronicEngineeringIntelligentVehicles/academic-calendar

**Second year curriculum ADE Università degli Studi di Parma**

follow the link https://dia.unipr.it/sites/dia/files/2026-06/Calendario%20attivit%C3%A0%20didattiche%20ingegneria%2026_27_0.pdf



## MASTER'S DEGREE IN ELECTRONIC ENGINEERING FOR INTELLIGENT VEHICLES

**All the lectures will be held in English**

### 1st year

### Curriculum "Electronic and Communication System" (ECS)

(Teaching venue: University of Bologna)

| Period | Mandatory Courses | SSD | CFU |
|---|---|---|---|
| 1st semester | Advanced automotive sensors | IMIS-01/B | 6 |
| Annual course | Hardware-software design of embedded systems I.C.<br>Architectures and firmware M<br>Real time OS | <br>IINF-01/A<br>IINF-05/A | 12<br>6<br>6 |
| 2nd semester | Automatic control | IINF-04/A | 6 |
| 1st semester | Signals and systems for vehicular communications | IINF-03/A | 6 |
| Annual course | Wired and wireless interconnections | IINF-02/A | 9 |
| **Period** | **Elective Courses**<br>**Elective complementary courses (pick 2 out of 3)(‡)** | **SSD** | **CFU** |
| 1st semester | Power electronics for automotive | IINF-01/A | 6 |
| 1st semester | Test, diagnosis and reliability | IINF-01/A | 6 |
| 2nd semester | Statistics and Machine Learning for Signal Processing | IINF-01/A | 6 |
| | **Elective complementary courses (pick 1 out of 2)(†)** | | |
| 2nd semester | Dynamics and compliant design of road vehicles | IIND-08/A | 6 |
| 2nd semester | Deep learning for engineering applications | IINF-05/A | 6 |
| **Period** | **Elective complementary courses (pick 1 out of 2)(†)** | **SSD** | **CFU** |
| 1st semester | Ground vehicle dynamics | NN | 3 |
| 2nd semester | Connected vehicles | NN | 3 |

### 1st year

### Curriculum "Autonomous Driving Engineering" (ADE)

| Period | Mandatory Courses | SSD | CFU |
|---|---|---|---|
| 1st semester | Advanced automotive sensors | IMIS-01/B | 6 |
| Annual course | Hardware-software design of embedded systems I.C.<br>Architectures and firmware M<br>Real time OS | <br>IINF-01/A<br>IINF-05/A | 12<br>6<br>6 |

| Period | | SSD | CFU |
|---|---|---|---|
| 2nd semester | Automatic control | IINF-04/A | 6 |
| 1st semester | Image processing and computer vision | IINF-05/A | 6 |
| Annual course | Vehicular radio propagation | IINF-02/A | 9 |
| 2nd semester | Deep learning for engineering applications | IINF-05/A | 6 |

| Period | **Elective Courses**<br>**Elective complementary courses (pick 2 out of 3)(‡)** | SSD | CFU |
|---|---|---|---|
| 1st semester | Power electronics for automotive | IINF-01/A | 6 |
| 1st semester | Test, diagnosis and reliability | IINF-01/A | 6 |
| 2nd semester | Statistics and Machine Learning for Signal Processing | IINF-01/A | 6 |

## 2nd year

## Curriculum "Electronic and Communication System" (ECS)

(Teaching venue: University of Modena e Reggio Emilia)

| Period | **Mandatory Courses** | SSD | CFU |
|---|---|---|---|
| 1st semester | Applied topics in automotive electronics | | |
| | Electronic systems design | IINF-01/A | 6 |
| | Automotive technologies for ranging, vision, and connectivity | IINF-02/A | 6 |

| Period | **Elective Courses**<br>**Elective complementary courses (pick 2 out of 5)(‡)** | SSD | CFU |
|---|---|---|---|
| 1st semester | Artificial intelligence for automotive | IINF-05/A | 6 |
| 1st semester | Industrial co-teaching | IIND-08/A | 6 |
| 1st semester | Automotive connectivity | IINF-03/A | 6 |
| 1st semester | Automotive cyber security | IINF-05/A | 6 |
| 1st semester | Modeling and control of electromechanical systems | IINF-04/A | 6 |
| | **Elective free-choice courses*** | | 12 |
| Other activities | **Final examination or** | | 24 |
| | **Final examination+ internship** | | 3+21 |



## 2nd year

## Curriculum "Autonomous Driving Engineering" (ADE)

(Teaching venue: University of Parma)

| Period | **Mandatory Courses** | SSD | CFU |
|---|---|---|---|
| 1st semester | Electronics and lighting technologies for automotive | | 12 |
| | Electronics for Automotive systems | IINF-01/A | 6 |
| | Automotive lighting and ranging technologies | IINF-02/A | 6 |
| 1st semester | Computer engineering laboratory | NN | 3 |

| Period | **Elective Courses**<br>**Elective complementary courses (pick 2 out of 5)(‡)** | SSD | CFU |
|---|---|---|---|
| 1st semester | 3D perception, learning-based data fusion | IINF-05/A | 6 |
| 1st semester | Autonomous driving and adas technologies | IINF-05/A | 6 |
| 1st semester | Virtual systems and human machine interface | IINF-05/A | 6 |
| 1st semester | Path and trajectory planning | IINF-04/A | 6 |
| 1st semester | Vehicular communications | IINF-03/A | 6 |
| | **Elective free-choice courses*** | | 12 |
| Other activities | **Final examination or** | | 24 |
| | **Final examination+ internship** | | 3+21 |

**Elective free-choice courses for both curricula 12 CFU**

| Period<br>2nd YEAR | **Elective free-choice courses** | SSD | CFU |
|---|---|---|---|
| 1st semester | Training for automotive companies creation I | IMIS-01/B | 6 |
| 1st semester | Training for automotive companies creation I | IMIS-01/B | 6 |
| 1st semester | Product safety, product liability and automotive M | GIUR-01/A | 6 |
| 1st semester | Artificial Intelligence for Automotive | | 6 |
| | - Artificial Intelligence for Automotive (Module 1) | ING-INF/05 | 3 |
| | - Artificial Intelligence for Automotive (Module 2) | ING-INF/05 | 3 |
| 1st semester | Automotive Connectivity | ING-INF/03 | 6 |
| 1st semester | Automotive Cyber Security | ING-INF/05 | 6 |
| 1st semester | Autonomous Driving and ADAS Technologies | ING-INF/05 | 6 |
| 1st semester | Electronics and Lighting Technologies for Automotive | | 12 |
| | - Automotive Lighting and Ranging Technologies | ING-INF/02 | 6 |
| | - Electronics for Automotive Systems | ING-INF/01 | 6 |

| Period<br>2nd YEAR | Elective free-choice courses | SSD | CFU |
|---|---|---|---|
| 1st semester | Industrial Co-Teaching | ING-IND/32 | 6 |
| 1st semester | Modeling and Control of Electromechanical Systems | ING-INF/04 | 6 |
| 1st semester | Path and Trajectory Planning | ING-INF/04 | 6 |
| 1st semester | Platforms and Algorithms for Autonomous Driving<br>- Platforms and Algorithms for Autonomous Driving (Module 1)<br>- Platforms and Algorithms for Autonomous Driving (Module 2) | <br>ING-INF/05<br>ING-INF/05 | 6<br>4<br>2 |
| 1st semester | Vehicular Communications | ING-INF/03 | 6 |
| 1st semester | Virtual Systems and Human Machine Interface | ING-INF/05 | 6 |
| 1st semester | Visual Perception for Self-Driving Cars | ING-INF/05 | 6 |
| 1st semester | 3D Perception, Learning-Based Data Fusion | ING-INF/05 | 6 |

**Instructions:** To complete your study plan, you must pick:

•2 courses (>= 12 CFU) from each "Elective Complementary Courses" menu labeled with (‡)

•1 course (>= 6 CFU) from each "Elective Complementary Courses" menu labeled with (†)

•2 courses (>= 12 CFU) from "Elective Free-Choice Courses" menu. Elective free-choice courses can also be selected from the list of Elective Complementary Courses with no need of further approval. Other courses can be chosen from those offered within Second Cycle Degrees (Lauree Magistrali) of the four Universities of Emilia Romagna, subject to approval by the course Program Committee.