



MASTER

in ACOUSTICS

PRESENTATION

Training location: Le Mans

Level of training: BAC+5

Course duration : 2 years

ECTS credits : 120

Type : National diploma

Type of training: Initial training (AA, AETBV, IMDEA, WP&A) work-linked training (AETBV)

DESCRIPTION

The Master of Acoustics at Le Mans Université is part of the training program offered by the Institut d'Acoustique - Graduate School (IA-GS) in conjunction with the Faculty of Science & Technology, and covers the main fields of fundamental and applied acoustics (from audible acoustics to ultrasonic acoustics):

- general acoustics,
- electroacoustics,
- mechanics and vibrations,
- vibroacoustics,
- signal processing,
- experimental methods,
- numerical methods.

The Master of Acoustics offers 4 different specialisations:

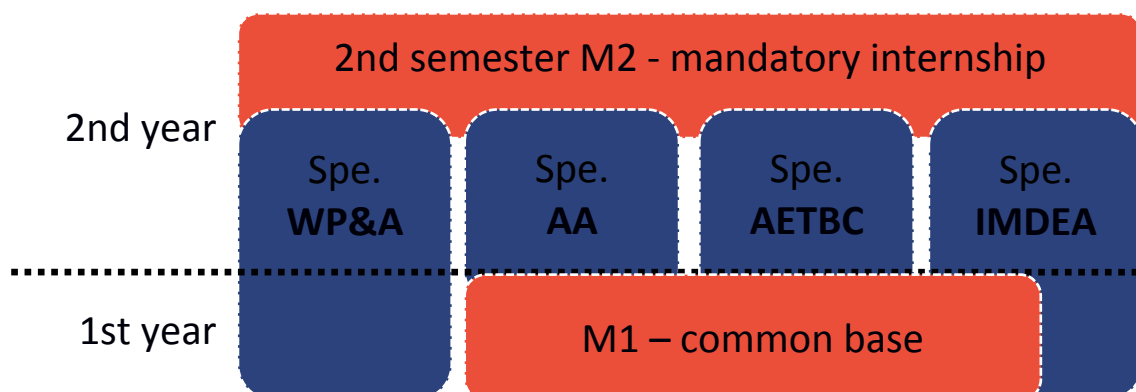
- Applied Acoustics (AA) research,
- Acoustics of the Environment: Transport, Buildings, Cities (AETBC),
- International Master's Degree in Electroacoustics (IMDEA),
- International Master's Degree in Wave Physics & Acoustics (WP&A).

The 1st year of the AA and AETBC programs is identical, providing basic knowledge of acoustics and offering a number of specific courses. The 1st semester of the second year of these courses is dedicated to the specific teaching of each specialisation.

The 1st year of the IMDEA specialisation is 50% based on the AA and AETBC specialisations, and offers additional specific courses in electroacoustics. The 1st semester of the second year of the IMDEA program is dedicated to specific courses for this program.

The 1st year and 1st semester of the 2nd year of the WP&A specialisation offer specific courses in wave physics and a personal research project connected to a research team at the Acoustics Laboratory (LAUM).

The 2nd semester of the 2nd year ends for all courses with a mandatory internship of 4 to 6 months in a laboratory, a large organization or a company.



1ST YEAR COMMON COURSES

Semester 1

Acoustics Basics (1 ECTS)
 Acoustics I (6 ECTS)
 Fluid Mechanics (2 ECTS)
 Mechanics of Deformable Media (3 ECTS)
 Vibration I (2 ECTS)
 Signal I (2 ECTS)
 Maths for acoustics (3 ECTS)
 Numerical Methods I (2 ECTS)
 Physics of Musical Instruments (2 ECTS)
 Introduction to Non-Destructive Testing (2 E)
 Room Acoustics I (3 ECTS)
 English (2 ECTS)

Semester 2

Acoustics II (5 ECTS)
 Transmission lines (2 ECTS)
 Vibration II (2 ECTS)
 Vibration experiments (2 ECTS)
 Signal II (2 ECTS)
 Numerical Methods II (2 ECTS)
 Introduction to Finite Elements (2 ECTS)
 Project (7 ECTS)
 Options (6 ECTS) from (1 choice)
 - Room acoustics II / Outdoor propagation and urban acoustics
 - Integral formulation and Green's function / Introduction to nonlinear acoustics and vibrations

The specific teaching offered in the IMDEA, WP&A and second-year AA and AETBV courses is presented on dedicated brochures (see the Le Mans Université Acoustics folder). Much of the scientific teaching is in English.

TEACHING STAFF

The Master's program relies heavily on the Laboratoire d'Acoustique de l'Université du Mans (LAUM, UMR CNRS 6613), which brings together all the research teams of the Institut d'Acoustique-Graduate School (IA-GS) and has an international reputation. Collaborations have also been established with the following laboratories and organizations for the various specialties in this field: Université Gustave Eiffel (Nantes, Bron), CEREMA (Strasbourg). Some courses are taught by professional lecturers from companies such as RENAULT, HEAD Acoustics, VALEO, ORFEA Acoustique, LMS France, SNECMA Moteurs, CSTB, LASA, SNCF, CEVAA, EDF, CETIM, INGEROP, AIRBUS, ALTRA, IFSTTAR, BC speakers, Klippel, Orange Lab, etc.

SKILLS AND ABILITIES DEVELOPED

Le Mans Université's Master's degree in Acoustics provides the theoretical and technical skills needed to tackle problems in acoustics, electroacoustics and vibration, in both engineering and research fields.

What's next?

This Master's degree enables students to enter the job market with a 5-year higher education diploma, working as acoustics engineers or R&D engineers in companies, design offices or public research establishments.

The vast majority of students in the AA and WP&A programs goes on to complete a thesis in a research laboratory in France or abroad.

ADMISSION

First year :

All students holding a Bachelor of Science degree (Acoustics, Physics, Mathematics, Mechanics, EEA, ...) or graduating from an engineering school must apply via the national application platform <https://www.monmaster.gouv.fr>

Second year:

Students must apply via <https://ecandidats.univ-lemans.fr>

IMDEA specialization: students must follow a specific procedure on the <https://imdeacoustics.univ-lemans.fr> website, including a scientific test and a motivation test.

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CONTACTS

Secretary: +33 2 43 83 36 23 -elisabeth.dubois@univ-lemans.fr

Master 1 :cyril.desjouy@univ-lemans.fr

Master 2, specialization AA : ...olivier.richoux@univ-lemans.fr

Specialization AETBV :christophe.ayrault@univ-lemans.fr

Specialization IMDEA :bruno.gazengel@univ-lemans.fr

Specialization WP&A :iags-master-wp@univ-lemans.fr

For further informations: <https://iags.univ-lemans.fr/fr/nos-formations/bac-1-a-bac-8-en-acoustique.html>