

M2 Program

The second year (M2) of the Master of Science in Acoustics focuses on the applications of Acoustics in industry and research. A large choice of courses offers the possibility of high level training in specific fields of Acoustics. By choosing his/her courses, each student builds his/her personal scientific curriculum. A significant part of the program is devoted to applications, during practicals, research projects and internships in laboratories or industry.

The first semester of M2 (S9, September to March) is based on a scientific program including a course in Advanced Acoustics and optional teaching units in Specialized Acoustics and Acoustic Applications. Each student* chooses 6 courses in these units (or 5 courses in these units and 1 other course).

Advanced Acoustics (24h lectures, 8h Practical Works): This course is to be taken by all students. They learn how to tackle an acoustic problem. The major concepts of Acoustics are detailed and applied to engineering issues. The lecture also describes specific tools (such as Green's functions, Rayleigh's integral, modal decomposition and geometric acoustic) that are commonly used for practical sound modeling (sources, acoustics in ducts, propagation in inhomogeneous media...)

Specialized Acoustics: Optional courses allow discovering appropriate acoustic descriptions, models and methods encountered in specialized acoustic fields. For some students, this can also be an opportunity to specialize in either fluid acoustics or solid acoustics. 3 or 4 courses to be chosen among the following (16h lectures and 8h PW for each course):

- Structural Acoustics
- Elastic wave propagation
- Building Acoustics
- Aeroacoustics
- Sound Perception
- Numerical Methods for Acoustics

Acoustic Applications: This teaching unit covers several applicative domains of Acoustics. It offers optional courses to be chosen according to each student's professional project. 2 or 3 of the following courses have to be chosen (each course comprising about 24h of lectures):

- Transportation noise
- Environmental Acoustics
- Active Control of Noise and Vibrations
- Ultrasound: Industrial and Medical Applications
- Ultrasound Imaging

Other courses: according to his or her professional and personal project, the student can choose one course (Master's degree or equivalent, 3 ECTS) not belonging to the MScAcoustics program. Several courses are proposed for this purpose by the academic partners of the MScAcoustics (Université Lyon1, Ecole Centrale de Lyon, Insa de Lyon, Ecole Nationale des Travaux Publics de l'Etat, National Music School of Lyon CNSMD).

The second semester of M2 (S10, March to August) is devoted to the Master's research internship (5-6 month internship in a laboratory or department of Acoustics, in industry or university).

(*) except for the students from Lyon who apply for a dual registration (fifth-year engineering students from ECLyon, InsaLyon, ENTPE, Polytech'Lyon or ECAM): for these students, see the specific procedure « pour les élèves-ingénieurs de Lyon ».