AVI speciality
Sound and Vibration Engineering
Acoustique et Vibration pour l’Ingénieur·e
Mechanical engineering department

- Created in 1977
- 21 graduates each year
- More than 800 alumni
- ≈ 10 lecturers

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www.facebook.com/UTCAVI/
Aim

• Provide skills to address the acoustic and vibration issues of society

• Sectors of activity:
  - transport industry (automobile, aeronautics, aerospace, naval, railway ...)
  - buildings, energy, environment
  - multimedia
Objectives

1. Control the sound and vibration environment
2. Design the acoustical signature of products

- News technologies
  - Control the sound and vibration levels
- Marketing
  - Sound design

My car should sound like this!

- Bruits aérodynamiques
- Bruits de boucle d'échappement
- Bruits de roulement
- Groupe moteur propulseur
- Bruits d'admission d'air moteur
Program

CORE

A+P  MQ03  Vibration I  (E. Arnoult/M.Bentahar)
P    MQ09  Vibrations of continuous systems (N.Dauchez)
P    PS09  Practice of acoustics (S.Moreau)
A+P  SY06  Signal processing (S.Moreau, P.Simard)
P    DS01  Acoustical design of products (N. Dauchez, C. Harbonnier)

SPECIALITY*

P    MQ19*  Structural dynamics (E. Arnoult)
P    PS05*  Fundamental acoustics: sources and propagation (P.Lanceleur/M.Bentahar)
A    PS12*  Room acoustics: materials and modeling (N.Dauchez/E.Perrey-Debain)
A    PS13*  Numerical modeling in structural acoustics (JD Chazot/MA Hamdi)
A+P  MS03*  Workshop in acoustics and vibration (N.Dauchez)

APPRENTICE

P    AM10  Practice of acoustics and vibration (S.Moreau/N.Dauchez)

A: Autumn / P: Spring
Red: Vibration / Yellow: Acoustics / Orange: Structural acoustics
Opening in 2018

DS01  Acoustical design

The sound of products
Marketing
Acoustical sources
Materials and shapes
Sound recording
Jury testing
International

Europe
- Sweden: Linköping University, Chalmers University
- Holland: Delft TU, Twente University
- UK: Cranfield University
- Germany: Berlin, Braunschweig
- Poland: Krakow AGH
- Belgium: Liège
- Italy: Polytechnico Milano, Turin
- Spain: Barcelona

North América
- US: Virginia Polytechnic Institute
- Canada: Université de Sherbrooke, ETS Montréal, Polytechnique Montréal

South América
- Chili: Universidad Arturo Prat
- Brasil: Unicamp
- Mexico: Tech de Monterrey

Australia
- University of Adelaide
Job opportunities

Automotive industry
Railway
Aeronautic
Aerospace
Naval
Building
Energy
Environment
Software
Expertise
Industrial and laboratory projects

Several subjects offered each semester (TX)

- Computationnal aeroacoustics
- Acoustic meta-materials
- Automotive engine noise
- Acoustical levitation
- Room acoustics
Linked to the research

Acoustics and vibration team of Roberval laboratory

http://roberval.utc.fr/

2011-2016

15 PhD

50 international papers

More than 80 conferences