



INTERNATIONAL SOUND ENGINEERING MASTER'S PROGRAM



For more information visit us at www.univ-bpclermont.fr/en/

INTRODUCTION

In October 2011 a three year international program in sound engineering as well as a professional recording studio will open their doors in Clermont-Ferrand (France) to students and professionals from all over the world.

After eighteen months of hard work with the state (Auvergne region) and the university Blaise Pascal, we are happy to announce that this innovative project has become a reality. By October 2011, a truly professional and unique environment for the purpose of teaching and also producing, tracking, editing, mixing and mastering will be open to professionals and students from all over the world.

Teaching the next generations of engineers is the foundation of this project. Keeping the music alive and making music in the best conditions are ultimately what we, engineers and producers, truly aspire to commit to.

Students enrolled in professional training programs such as sound engineering and acoustics need to learn and understand specific scientific material in order to excel in their field. Our goal is to give our students the opportunity to acquire excellent theoretical knowledge of electromagnetic waves, sound waves (characteristics, propagation, wave modeling, diffusion...), electric current flow, electric current conversion and microelectronics. We wish for our students to become skillful and thoughtful professional with all-round practical skills in a field that requires not only scientific knowledge but also imagination, creativity and a great deal of concentration and commitment.

THE PROGRAM

The purpose of this three year program is to prepare the next generation of engineers to achieve even under pressure the best results in the most demanding situation. Understanding acoustics, sound, electrical current, transistors, resistance... and most importantly music, will be on the “menu” for those enrolled in the program. A professional recording studio will play a major role in the training process. Students will be trained in a properly crafted environment and will also be able to assist in professional sessions. However, the proper facility and equipment are not the only factors needed to accomplish the program’s objectives. It is also important to have on board experienced teachers to set new standards and raise the bar as high as possible. Note that all courses taught in the final year of the master’s program are advanced specialized courses.

COURSES BRIEF OVERVIEW

L3 - SEMESTER S1

COURSES DESCRIPTION/U.E.	HOURS PER SEMESTER			CREDITS ECTS
	CM	LAB	WS	
UE1 : Reproduction, duplication, conservation and restitution of sound / History et development Evolution of music through the centuries, Instruments through centuries, Culture and developments of music in the world/ Modern music, Music and mathematics, Music and technology.	20	15		5
UE2 : Technical English Technical language proper to sound engineering		15	20	5
UE3 : Applied mathematics to sound Sound waves properties and behavior, harmonics, frequencies, bits, binary system.	25	25		5
UE4 : Sound reproduction From the microphone to the tape or digital support. Transducers, signal conversion, audio processing.	10	18	12	5
UE5 : Pro Tools/digital recording and editing platform Introduction to working on a computer with digital tools for sound recording, editing, mixing and mastering	10		20	5
UE6 : Sound recording/editing in the digital domain Working on a computer with digital tools/editing existing recorded track/internal processing/problem solving	15	10	20	5
TOTAL HOURS L3 - S1	80	83	72	30

L3 - SEMESTER S2

COURSES DESCRIPTION/U.E.	HOURS PER SEMESTER			CREDITS ECTS
	CM	LAB	WS	
UE7 : Fundamentals of acoustics Vibration, reflection, transmission, radiation, absorption and attenuation of sound. Hearing and speech.	10		15	5
UE8 : Introduction to miking techniques Microphone types and pick up patterns Fundamentals on miking techniques in enclosed space	20	20	10	5
UE9 : Editing in depth/Pro Tools in depth Practical exercises on editing and compiling tracks of different instruments and performances. Understanding and mastering Pro Tools capabilities.	5		35	5
UE10 : Music production project Group training focusing on the production of existing basic recorded tracks. Structure analysis, composition and arrangement.		25		5
UE11 : fundamentals of acoustics in an enclosed space Sound in enclosures, Reverb time, Direct and reverberant sound, Acoustic factors in architectural designs.	10		35	5
UE12 : Internship Two month internship in an environment related to track cleaning, editing, archiving and manipulating audio material.				5
TOTAL HORAIRE L3 - S2	50	45	100	30

M1 - SEMESTER S1

COURSES DESCRIPTION/U.E.	HOURS PER SEMESTER			CREDITS ECTS
	CM	LAB	WS	
UE1 : Sound wave behavior/Applied physics Interference and beat, the Doppler effect and shock waves, Boundary behavior, Reflection, refraction and diffraction.	15	15	18	5
UE2 : Dynamics and signal processing Compression, limiting, expansion, gating, using equalization. Reducing noise, Deessing, Preventing overload. (DBU-DBV-RMS-PEAK-DECIBEL-VOLTAGE) Digitalizing a sound wave Small project involving modeling a sound wave	20	20	18	5
UE3 : Microelectronics Semiconductors, capacitors, transistors, inductors, resistors, diodes, insulators, conductors, integrated circuits. Ohm's law, Impedance.	15	15	18	5
UE4 : Fundamentals to mixing techniques Understanding signal flow, Frequency conscious separation, width, depth, Use of dynamics tools, understanding phase, distortion, headroom, stereo imaging.	15		30	5
UE5 : Advance miking techniques Miking and recording acoustic and electric instruments. Advanced microphone placement, Pre amplification set up, Compression and equalization set up. Gating technics, impedance matching.	15		30	5
UE6 : Fundamentals of acoustics, reinforcement Vibration, reflection, transmission, radiation, absorption and attenuation of sound. Hearing and speech.	20	10	18	5
TOTAL HORAIRE M1 - S1	100	60	132	30

M1 - SEMESTER S2

COURSES DESCRIPTION/U.E.	HOURS PER SEMESTER			CREDITS
	CM	LAB	WS	
UE7 : Legal aspects pertaining to the music industry Publishing, studio management, artist management...	40			5
UE8 : Microelectronics part 2 In depth understanding of pre-amplifiers, compressors and equalizers.	20	10	28	5
UE9 : FX Understanding reverbs and delays as well as other effects applied to a mix.	10		12	5
UE10 : Mixing and creativity Personalizing given recorded tracks into making an interesting mix using mixing techniques and FX.	20	10	28	5
U11 : Mixing project Group assignment on a given mixing project in real situation.			30	5
UE12 : Research project Initiation to research and innovation			30	5
TOTAL HORAIRE M1 - S2	80	20	128	30

M2 - SEMESTER S1

COURSES DESCRIPTION/U.E.	HOURS PER SEMESTER			CREDITS
	CM	LAB	WS	
UE1 : Advanced microelectronics Building a simple pre-amplifier and a simple compressor	10		20	5
UE2 : Introduction to Mastering Fundamentals of mastering audio	10		20	5
UE3 : 5.1 miking techniques In depth study of miking techniques for 5.1 mixing 5.1 imaging.	10		20	5
UE4 : 5.1 spatialization projection and localization of sound sources in space.	10		30	5
UE5 : 5.1 mixing Surround mixing techniques	10		40	5
UE6 : Introduction to Logic Understanding Logic as a recording program. Music production with Logic	10		20	5
TOTAL HORAIRE M2 – S1	60		150	30

M2 - SEMESTER S2

COURSES DESCRIPTION/U.E.	HOURS PER SEMESTER			CREDITS
	CM	LAB	WS	
UE7: Mastering et Sequencing Setups, monitoring, phase, levels, dynamics, conversion, formats...	15		50	5
UE8 : Mixing to picture Understanding mixing to picture such as commercials, music videos, short films.			40	5
UE9 : Conferences Conferences held by professionals in the music industry.	25			5
UE10 : Internship 3 months internship in a professional environment.				15
TOTAL HORAIRE M2 – S2	40		90	30

THE STUDIO

A carefully crafted 2500ft² professional recording facility will host an SSL Duality 48 channels, 8 Neve channel strips and a large variety of hardware compressors, equalizers, effect processors, converters, microphones and more.

The studio A has been designed with modular acoustic in mind so that students can learn the fundamentals of acoustics in an appropriate room and professionals can customize the recording environment to their liking while tracking.

