Master

Auton'Hom-e

Science-Technology-Health

Specialization in Auton'Hom-e [otɔnɔmi]

Technical and Socio-economic Solutions for People's Autonomy
Health Engineering

A joint France-Canada-Portugal diploma

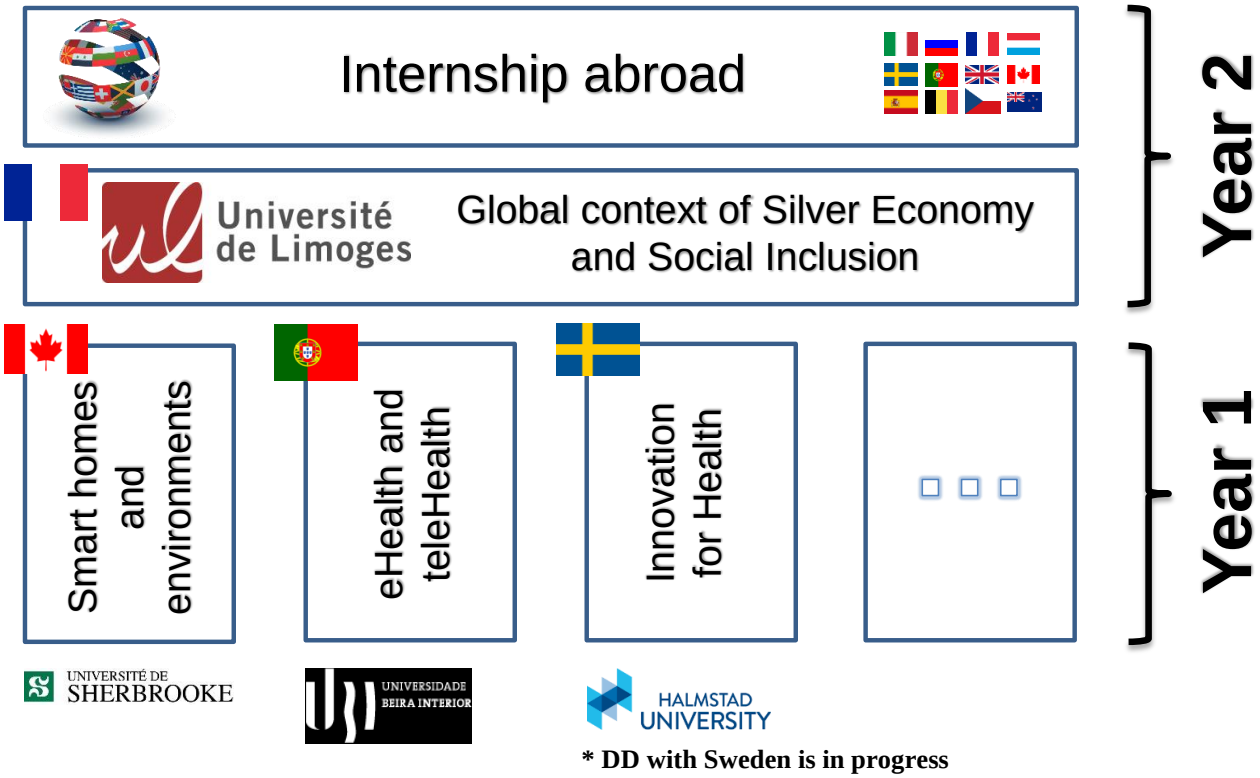
Smart-Homes for Autonomy (1)
Information Management for Ambient Assisted Living – TeleHealth (2)

The first year is done at Université de Sherbrooke (US) (www.usherbrooke.ca) or Universidade de Beira Interior in Covilhã (UBI) (www.ubi.pt)
The second year is done at Université de Limoges (Unilim) (www.unilim.fr).

The official language of training is French at US Sherbrooke and English at UBI and Unilim.

The following document describes the Units of courses, with the corresponding credits (ECTS), face-to-face hours, and equivalent student workload.
*Workload = duration * 4 in Portugal; Workload = duration * 2 in France*
*(except intensive language: Workload = duration * 4 in both countries)*
1 Credit in Canada = 2 ECTS in Europe

Training Scheme



Prerequisite degrees

A. First year at UBI

The accepted degrees are BSc or equivalent in:

- Health sciences including Medicine, Nursing and Pharmacy
- Computer Science including Communication networks, Home Automation and ICT
- Social Sciences
- Human Resources Management and Logistics
- Public Health Management
- Hospital Administration
- Global Health and Public Policy
- e-Health Management
- Bio Sciences including Bioengineering and Genetics
- Bioinstrumentation, Epidemiology, Biotechnology
- Other Sciences related to health or computer science

Equivalent levels can be validated through continuing education in the same areas.

B. First year at US Sherbrooke

Students must meet the admission requirements for Master IT degree from the University of Sherbrooke. Main skills deal with computer engineering.

C. Second year at Unilim

Entry in M2 is automatic for students who have validated their first year.

You are a student or a professional in the fields of Health, Social and Medical Studies, Management or Technology? Directly enter second year!

Direct entry into second year is for students who have passed the first year of a MSc involving the same skills.
Equivalent engineering school paths in suitable fields, to be validated by consulting with academic team with also be considered.

D. Would you like to increase the prestige of your training and professional skills?

Enter first or second year, depending on your specific field and career path, and by Validating Acquired Experience.

Internship / Master Thesis

During the second year at Unilim, the students can be funded for a 5-month internship abroad in one of the partner universities of the consortium.

Special partnership

Auton'Hom-e Master degree is affiliated to the French Engineering School Mines-Télecom group. Institut Mines-Télécom is a public institution dedicated to higher education, research and innovation in engineering and digital technologies. The institution is under the authority of the Minister for Industry and Electronic Communication (see. https://www.mines-telecom.fr/en/).

Application procedure

A. First year at UBI

1/ To apply you will need to complete our postgraduate online application form at https://academicos.ubi.pt/Default.aspx
2/ Confirm you application form by sending an email to Portuguese and French programme directors (see email addresses below)
3/ Your application will be studied by the academic staff.
4/ If your application is accepted you will receive further instruction so as to complete your administrative enrolment.

Students will pay fees for the first year at UBI. The Portuguese administrative fees are 1500 € for the first two semesters in Portugal. French Students that are enrolled by UBI can get a scholarship of up to 1000 € paid from Unilim for the fees of the first year. French students will be administratively registered at Unilim, free of fees.

Programme director
Miguel Castelo-Branco
Phone: +351 275 319 700
Fax: +351 275 329 183
Mail: mcbranco@fcsaude.ubi.pt
Associate Professor, MD, PhD
Universidade da Beira Interior - Faculdade de Ciências da Saúde
University of Beira Interior - Faculty of Health Sciences

B. First year at US Sherbrooke

1/ To apply you need to complete the postgraduate online application form from the University of Limoges from mid-March to June 1.
Faculté Sciences et Techniques
Scolarité – Bureau des masters
123 avenue Albert Thomas, 87060 LIMOGES
Tél. 05 55 45 74 02
Mail. msciences@unilim.fr
2/ Confirm you application form by sending an email to the French programme director (see email addresses below)
3/ Your application will be studied by the academic staff of Unilim and US Sherbrooke.
4/ If your application is accepted you will receive further instruction so as to complete your administrative enrolment.
Students form France do not have to pay any fees to enter US Sherbrooke. Accepted students can get a scholarship of up to 5000 € (3000 € for the first year at US Sherbrooke) paid from Unilim and 2000 € for the Master thesis at US Sherbrooke for the last semester of the second year.

Programme Directors
Laurent Billonnet
Tel. +33 6-07-61-56-97
Mail. laurent.billonnet@unilim.fr
Faculty of Science and Technology - Limoges University - France
www.sciences.unilim.fr
Hélène Pigot
Tel. 819-821-8000- P63078
Mail. helene.pigot@ussherbrooke.ca
Faculty of Sciences – Sherbrooke University – Québec - Canada
www.usherbrooke.ca

C. Second year at Unilim

1/ To apply for direct entry in second year you will need to complete our postgraduate online application form from mid-March to June 1.
Faculté Sciences et Techniques
Scolarité – Bureau des masters
123 avenue Albert Thomas, 87060 LIMOGES
Tél. 05 55 45 74 02
Mail. msciences@unilim.fr
2/ Confirm you application form by sending an email to the French programme director (see email addresses below)
3/ Your application will be studied by the academic staff.

4/ If your application is accepted you will receive further instruction so as to complete your administrative enrolment.

Applicants living in a country which is a member of CAMPUS France should apply online through their country's CAMPUS France portal before April 1: www.campusfrance.org

Fees: the standard cost of a French Master's degree i.e. administrative enrolments costs (around €600 for the second year).

For scheme 1, all students will be also administratively registered at US Sherbrooke free of fees.
For scheme 2, all students will be also administratively registered at UBI free of fees.

Programme Director
Laurent Billonnet
Tel. +33 6-07-61-56-97
Mail. laurent.billonnet@unilim.fr
Faculty of Science and Techniques - Limoges University - France
www.sciences.unilim.fr

Locations

1. Faculty of Science of Sherbrooke University – Computer engineering department - Québec (www.usherbrooke.ca)
   2500 Boulevard de l'Université, Sherbrooke, Québec J1K 2R1, Canada
2. Universidade da Beira Interior - Faculdade de Ciências da Saúde (www.fcsaude.ubi.pt)
   University of Beira Interior - Faculty of Health Sciences
   Avenida Infante D. Henrique, 6200-506 Covilhã, Portugal
3. Home Automation & Health Ressources Centre in Guéret
   Pôle Domotique et Santé de Guéret
   29 route de Courtille, BP 302 - 23006 Guéret Cedex, France
   (www.sciences.unilim.fr, www.odyssee2023.com)

Main other partner universities

Many other partner universities can host students for their internship/master thesis.

The main are:

- Halmstad University (HH) in Sweden,
- University of Control Systems ann Radioelectronics (TUSUR) in Tomsk in Russia,
- Ulster University (UU) in Belfast in Northern Ireland,
- University of Deusto in Bilbao in Spain,
- VIVES University college in Bruges in Belgium,
- Czech Technical University (CTU) in Prague in Czech Republic,
- University of Zaragoza in Spain,
- Technical University of Lulea (LTU) in Sweden.

Semester 1 at US Sherbrooke

UNIVERSITÉ DE SHERBROOKE

Activité pédagogique obligatoire
IFT 845 Activités de recherche I (8cr)

Activité pédagogique à option
IFT701 Reconnaissance de formes (3cr)
IFT703 Informatique cognitive (3cr)
IFT715 Interfaces personne-machine (3cr)
IFT720 Outils fondamentaux pour le génie logiciel (3cr)
IFT724 Systèmes à base de connaissances (3cr)
IFT725 Réseaux neuronaux (3cr)
IFT737 Conception des systèmes parallèles et distribués (3cr)
IFT744 Sujets approfondis en télématique (3cr)
IFT785 Approches orientées objets (3cr)

Avec l'approbation du directeur de recherche l'étudiante ou l'étudiant peut choisir une activité pédagogique d'au plus trois crédits, parmi les suivantes :

IFT501 Recherche d'information et forage de données (3cr)
IFT604 Applications internet et mobilité (3cr)
IFT605 Systèmes répartis et multiagents (3cr)

15 Canadian credits = 30 European ECTS

Semester 2 at US Sherbrooke

Activité pédagogique obligatoire
IFT846 Activités de recherche II (8cr)

Activité pédagogique à option
IFT701 Reconnaissance de formes (3cr)
IFT702 Planification en intelligence artificielle (3cr)
IFT715 Interfaces personne-machine (3cr)
IFT720 Outils fondamentaux pour le génie logiciel (3cr)
IFT724 Systèmes à base de connaissances (3cr)
IFT725 Réseaux neuronaux (3cr)
IFT729 Conception de systèmes temps réel (3cr)
IFT737 Conception des systèmes parallèles et distribués (3cr)
IFT744 Sujets approfondis en télématique (3cr)
IFT785 Approches orientées objets (3cr)

Avec l'approbation du directeur de recherche l'étudiante ou l'étudiant peut choisir une activité pédagogique d'au plus trois crédits, parmi les suivantes :

IFT603 Techniques d'apprentissage (3cr)
IFT615 Intelligence artificielle (3cr)
IFT630 Processus concurrents et parallélisme (3cr)
IGL301 Spécification et vérification des exigences (3cr)

15 Canadian Credits = 30 European ECTS

Semester 1 at UBI

Unit	Module	Title	ECTS	Duration (in hours)	Workload (in hours)
U 1-1	**Communication, management, research and innovation tools 1**		**10 (13*)**	**60 (80*)**	**240 (320*)**
	M 1-1-1	Communication in English 1		15	60
	M 1-1-2	Intensive Portuguese (optional)*	*	*20*	*80*
	M 1-1-3	Research methods		15	60
	M 1-1-4	Introduction to Health information systems		30	120
U 1-2	**eHealth Technologies and Models**		**10**	**60**	**240**
	M 1-2-1	Health technologies		20	80
	M 1-2-2	Models of Quality Management for eHealth		20	80
	M 1-2-3	eHealth 3.0		20	**80**
U 1-3	**eHealth Quality Achievement**		**10**	**60**	**240**
	M 1-3-1	Process monitorization, Indicators and Quality		30	120
	M 1-3-2	Security, Privacy and Non-repudiation of Electronic Health Records		30	120
U 1-4	**Project 1**		**-****	**30**	**120**
	* 3 credits for non-Portuguese speaking students ** All credits for Project are obtained at S2		**30 (33*)**	**210 (230*)**	**840 (920*)**

Semester 2 at UBI

Unit	Module	Title	ECTS	Duration (in hours)	Workload (in hours)
U 2-1	**Communication, management, research and innovation tools 2**		**5**	**40**	**160**
	M 2-1-1	Communication in English 2		15	60
	M 2-1-2	Technological survey		25	100
U 2-2	**eHealth Services Development**		**10**	**60**	**240**
	M 2-2-1	Process Modelling and Workflows		30	120
	M 2-2-2	Patient Relationship Management		30	120
U 2-3	**eHealth Interoperability Standards**		**10**	**60**	**240**
	M 2-3-1	Telehealth, methods and models of interoperability		30	120
	M 2-3-2	Medical Devices		30	120
U 2-4	**Project 2**		**5****	**30**	**120**
	** All credits for Project are obtained at S2		**30**	**190**	**760**

Total for S1 + S2	**60 (63*)**	**400 (420*)**	**1600 (1680*)**

* 3 credits for non-Portuguese speaking students

Semester 3 at Unilim

Unit	Module	Title	ECTS	Duration (in hours)	Workload (in hours)
U 3-1	**Communication, management, research and innovation tools 3**		**7,5 (10,5*)**	**90 (110*)**	**180 (260*)**
	M 3-1-1	Communication in English 3		20	40
	M 3-1-2	Intensive French (optional)*	*	*20*	*80*
	M 3-1-3	Management and innovation culture		30	60
	M 3-1-4	Communication and innovation		28	56
	M 3-1-5	Entrepreneurship		12	24
U 3-2	**Legal and medical social frameworks of aging, dependency and disability**		**3,5**	**42**	**84**
	M 3-2-1	Dependence and aging in France		12	24
	M 3-2-2	Organization of medico-social sector		6	12
	M 3-2-3	Home care and services to the person schemes		12	24
	M 3-2-4	Patients' rights		12	24
U 3-3	**Home automation and ICT for autonomy**		**5**	**60**	**120**
	M 3-3-1	Context of home automation today		17	34
	M 3-3-2	Technical solutions, interfaces and Technology survey		20	40
	M 3-3-3	Intelligent home automation for home support		23	56
U 3-4	**Semiotics of the interfaces for autonomy**		**2**	**24**	**48**
	M 3-4-1	Definitions of the interface		2	4
	M 3-4-2	User satisfaction and usage of ICT object		7	7
	M 3-4-3	Parameters of Human-Machine interaction		9	18
	M 3-4-4	Interaction and modes of sensitivity		6	12
U 3-5	**Medical aspects of loss of autonomy**		**4**	**48**	**96**
	M 3-5-1	Context of autonomy and aging		12	24
	M 3-5-2	Pathological criteria leading to a loss of autonomy		9	18
	M 3-5-3	How to fight the loss of autonomy		6	12
	M 3-5-4	ICT and home automation for the elderly		9	18
	M 3-5-5	Socio-economic impact of technologies		12	24
U 3-6	**Organization management and socio-economic models**		**3**	**36**	**72**
	M 3-6-1	Socio-economic models of Services to the person		12	24
	M 3-6-2	Quality and evaluation process		6	12
	M 3-6-3	Human resources management		6	12
	M 3-6-4	Marketing		6	12
	M 3-6-5	Information systems		6	12
U 3-7	**Project 3**		**5**	**-**	**200**
* 3 credits for non-French speaking students			**30 (33*)**	**300 (320*)**	**800 (880*)**

Semester 4

Unit	Module	Title	ECTS	Duration (in weeks)	Duration (in hours*)	Workload (in hours)
U 4-1	**Internship / Master thesis**		**30**	**20**	**700**	**800**

* 35h per week

Total for S3 + S4	**60 (63*)**	**1000 (1020*)**	**1600 (1680*)**
* 3 credits for non-French speaking students	*ECTS*	*Duration (in hours)*	*Workload (in hours)*