RÉPUBLIQUE FRANÇAISE
Liberté Égalité Fraternité

UFR SANTÉ

UNIVERSITÉ CAEN NORMANDIE

MASTER

BIOLOGIE-SANTÉ

DIPLÔME NATIONAL DE MASTER CONTRÔLÉ PAR L'ÉTAT

Parcours :

SpaceMed



Niveau de diplôme	Durée du programme	Lieu.x de formation	Crédit ECTS
Grade de Master (Bac+5)	2 ans	Caen	120

Programme outline

SpaceMed is a 2-year full-time European Master's programme offering a unique integrated inter- and multidisciplinary study on the effects of extreme environments, particularly space flight, on humans. The curriculum places a strong emphasis on hands-on activities in state-of-the-art laboratories and on field studies, including space flight analogues (i.e., parabolic flights, Antarctic habitats, experimental bed rest studies, etc.), and extreme environments, such as those experienced at high altitude, underwater, and in hot and cold, dry and humid environments.

Strengths

- Small class size and close interaction with the teaching staff
- Science teaching and training with innovative and interdisciplinary methodologies
- Research projects (laboratory and field studies) involving experimental work, data analysis and interpretation
- Workshops bringing together students, academics and industry professionals
- Involves students in space projects supported by German, French, European and US space agencies.
- Provides students with an international network and an integrated multicultural and linguistic experience.
- Immersion in at least three European cultural regions (France, Germany, Slovenia) during the course of the study
- Attractive scholarships

Objectifs de la formation

The objective of this Master's degree is to provide graduates with a high level of knowledge and competencies in physiology and space medicine. Specifically, the objectives of this Master's degree are to: (a) train future researchers; (b) train doctors and scientists who will be involved in medical aptitude and medical supervision of space flight; (c) educate top skilled engineers who will be able to design, optimize, operate, and validate aerospace life support systems; (d) provide students with an international network as well as a genuine European learning and an integrated multicultural and language experience.

Compétences acquises

See : https://www.space-med.eu/carrer-and-alumni/competence-and-employment

Principaux enseignements

Semester 1 in Caen: Biomedical Physiology

- Basic human physiology, with emphasis on extreme environments.
- Hands on activities in research and clinical laboratories

- Practical demonstrations with associated partners (e.g., parabolic flight)
- Ethics in research
- Data analysis
- Statistical procedures

The Caen programme is taught by faculty from the various partners.

Semester 2 in Berlin: Environmental Physiology

Building on the lessons of the first semester, students will receive advanced knowledge in some specialised areas. They will also learn to use advanced measurement methods during their laboratory rotation. Finally, they will carry out a research project during a two-month internship.

Semester 3 in Ljubljana: Extreme environments

- Human habitats in extreme environments
- Spaceflight-associated musculoskeletalatrophy
- Spaceflight-associated cardiovascular deconditioning
- Circadian rhythms, sleep and nutrition
- Space Ergonomics, including human-robot interaction
- Pilot studies (bedrest, countermeasures, hypoxic confinement, isolation etc.)

Semester 4: Master thesis

Students will complete a six-month research project or industrial placement. The culmination of all semesters will lead to the awarding of a Master Thesis.

Admission · inscription

CONDITIONS D'ACCÈS

Admission requirementsEither a Bachelor's degree in natural sciences or kinesiology (180 ECTS), a Master degree in engineering, or a medical degree. A minimum level of English language proficiency equivalent to B2 according to the levels defined by the Common European Framework of Reference for Languages (CEFR). Applications have to be made through the SpaceMed website.

PROCÉDURE D'INSCRIPTION : CANDIDATURE

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Contact

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