

# MASTER BIOLOGIE-SANTÉ



## Parcours :

→ SpaceMed



**Niveau  
de diplôme**

Grade de Master  
(Bac+5)



**Durée  
du programme**

2 ans



**Lieu.x  
de formation**

Caen



**Crédit  
ECTS**

120

## ► 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>

## ► Poursuite d'études

PhD

## ► Métiers visés

### Carrer perspectives

The objective of the SpaceMed Master's degree is to provide training for those interested in pursuing a research career in space life sciences and extreme environments, as well as for medical doctors who would be able to offer medical support for future commercial space flights. The course will also provide valuable training to biomedical engineers who will be able to design, optimise, operate, and validate aerospace life support devices.

## ► 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 musculoskeletal atrophy
- 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 requirements**

Either 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

### **Admission requirements**

Either 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](#).

## **► Contact**

Université de Caen Normandie

UFR Santé

Pôle des formations et de recherche en santé (PFRS)

2 rue des Rochambelles · CS 14032 · 14032 Caen Cedex 5

<https://ufr-sante.unicaen.fr/>