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# ENGINEERING PROGRAMME

2024-2025

Year 3

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Professional Option  
Health and humanitarian  
engineer

OP INGSANTE

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PROGRAMME SUPERVISOR

Thomas LECHEVALLIER



ENGINEERING - OP INGSANTE

# Autumn Semester

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Course unit	ECTS Credits	Track	Course code	Title
UE 92	4	Core course	HUMA SANTE	Engineering in humanitarian field Engineering in healthcare field

# Spring Semester

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Course unit	ECTS Credits	Track	Course code	Title
UE 102	1	Core course	PROSAN	Healthcare and humanitarian projects

## ENGINEERING - OP INGSANTE

Year 3 - Autumn Semester - Course Unit 92

# Engineering in humanitarian field [HUMA]

LEAD PROFESSOR(S): Thomas LECHEVALLIER

### Requirements

### Objectives

Present the evolution of the healthcare and humanitarian sector through new technologies  
Understand the players in the healthcare industry

Gain an insight into public and private hospital professions  
Find your bearings in the humanitarian sector  
Move towards industrial and service professions

Participate in technical and organizational projects with committed players

### Course contents

Intervention in the humanitarian field  
Humanitarian product design  
Humanitarian logistics

### Course material

### Assessment

Individual assessment: EVI 1 (coefficient 1)

LANGUAGE OF INSTRUCTION	ECTS CREDITS	LECTURES	TUTORIALS	LAB	PROJECT	EXAM
French	2	36 hrs	10 hrs	0 hrs	2 hrs	0 hrs

## ENGINEERING - OP INGSANTE

Year 3 - Autumn Semester - Course Unit 92

# Engineering in healthcare field [SANTE]

LEAD PROFESSOR(S): Thomas LECHEVALLIER

## Requirements

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## Objectives

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Presentation of health (teaching of fundamentals on medicine, population health and its political and societal organization),

## Course contents

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Health, the fundamentals (24h CM / 6h TD):

- Body and mind
  - o A / physiology:  
embryology / cell biology / biochemistry,  
basic anatomy,  
systems (nervous, digestive, cardiovascular, respiratory, immune, hematology, nephro-urothelial)  
body adaptability: tolerance  
senescence
  - o B / pathology, the various attacks:  
Oncology,  
Vascular pathology,  
traumatology,  
autoimmune disease,  
infectiology,  
toxicology,  
psychiatry,  
genetics.
  - The actions of medicine on the body and on the mind
    - o A / clinical examination and questioning,
    - o B / diagnostic research  
Imaging,  
Biology,  
invasive gestures
    - o C / therapeutic  
Medicine and pharmacy,  
Kinè and rehabilitation,  
Diet,  
Surgery or interventional,  
Dialysis / chemo / transfusion,  
Resuscitation,  
Radiotherapy,  
Pain,
  - The human being (ethical debates and staging of cases)
    - o sick doctor relationship,
    - o medical ethics: 4 principles (autonomy, benevolence, non-maleficence, justice),
    - o psychology versus medicine,
- Large-scale health
  - o population health and public health,
  - o epidemic,

- o humanitarian medicine
  - Health networks and actors
- o in town: attending physician and correspondent, HAD, outpatient, networks with paramedics,
- o shared medical file,
- o hospital: care sector, role of the different actors (medical, support services, administrative)
- o Importance of time: Emergencies, deadlines, citizen actions

## Course material

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## Assessment

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Individual assessment: EVI 1 (coefficient 1)

LANGUAGE OF INSTRUCTION	ECTS CREDITS	LECTURES	TUTORIALS	LAB	PROJECT	EXAM
French	2	36 hrs	10 hrs	0 hrs	2 hrs	0 hrs

## ENGINEERING - OP INGSANTE

Year 3 - Spring Semester - Course Unit 102

# Healthcare and humanitarian projects [PROSAN]

LEAD PROFESSOR(S): Thomas LECHEVALLIER

### Requirements

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### Objectives

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Apply learning in the conduct of a real value-added health or humanitarian project

### Course contents

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health, hospital, private, public and industrial projects.

### Course material

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### Assessment

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Collective assessment: EVC 1 (coefficient 1)

LANGUAGE OF INSTRUCTION	ECTS CREDITS	LECTURES	TUTORIALS	LAB	PROJECT	EXAM
French	1	0 hrs	0 hrs	0 hrs	36 hrs	0 hrs