
ENGINEERING PROGRAMME

2023-2024

Year 3

Professional Option
Health and humanitarian
engineer

OP INGSANTE

PROGRAMME SUPERVISOR

Thomas LECHEVALLIER



ENGINEERING - OP INGSANTE

Autumn Semester

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

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

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	0 hrs	2 hrs

ENGINEERING - OP INGSANTE

Year 3 - Autumn Semester - Course Unit 92

Engineering in healthcare field [SANTE]

LEAD PROFESSOR(S): Thomas LECHEVALLIER

Objectives

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

Course contents

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

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	0 hrs	2 hrs

ENGINEERING - OP INGSANTE

Year 3 - Spring Semester - Course Unit 102

Healthcare and humanitarian projects [PROSAN]

LEAD PROFESSOR(S): Thomas LECHEVALLIER

Objectives

health, hospital, private, public and industrial projects.

Course contents

Course material

Assessment

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