

Double Degree am INP Grenoble



TECHNISCHE
UNIVERSITÄT
DARMSTADT

Geplanter Studienverlauf in Deutschland

vorgezogene Masterleistungen

Fach	einzubringen in	CP
Französisch 3/4	Studium Generale	6
Französisch 5	Studium Generale	3
Allgemeine Informatik II	Ingenieur- und Naturwissenschaften	6

1. Mastersemester, SoSe 2016

Fach	einzubringen in	CP
Technologie der Mikrosystemtechnik	Grundlagen	4
Praktikum Elektromechanische Systeme	Grundlagen	4
Elektromechanische Systeme II	Grundlagen	4
Mikrosystemtechnik	Grundlagen	4
Sensortechnik	Grundlagen	4
Vertiefungsseminar Mikrosystemtechnik	Wahlkatalog	4
Sensorsignalverarbeitung	Wahlkatalog	3
Technische Optik	Wahlkatalog	3

abgedeckte Bereiche

Bereich	geplante CP	geforderte CP
Grundlagen	20	28
Wahlkatalog	10	32
Ingenieur- und Naturwissenschaften	6	21
Studium Generale	9	9
Summe	45	90

Anmerkung: Die Fächer Sensortechnik und Mikrosystemtechnik werden im Sommersemester nicht gelehrt. Geplant ist daher die Fächer in Selbststudium zu lernen und die Prüfung zu schreiben. Die meisten im Sommersemester angebotenen Veranstaltungen bauen auf welchen aus dem Wintersemester auf, daher ist es andernfalls schwierig ein vollständiges Semester zusammen zu stellen.

Ähnliche Veranstaltungen zwischen dem INP Grenoble und der TU Darmstadt

Grundlagen			
Fach der TU Darmstadt	CP	Fach des INP Grenoble	CP
Optoelektronik	3	/	/
Praktische Entwicklungsmethodik III	5	Labwork : Molecular biology & Biochemistry	3
		Medical Imaging Labwork	2
		Nanobiology labwork	3
		Cell biology labwork	1
Wahlkatalog			
Numerische Berechnungsverfahren	4	Numerical methods : simulations	4.5
		Numerical methods : simulation project	2
Lichttechnik I	5	Optics	2
Biomedizinische Technik	3	Medical Imaging Labwork	2
		Nuclear Magnetic Resonance and Magnetic Resonance Imaging	2
		Particle-Rays Matter Interaction	2

Der vollständige Studienverlauf am INP Grenoble mit Modulbeschreibungen findet sich hier:
<http://phelma.grenoble-inp.fr/engineering-degree/degree-biomedical-engineering-240319.kjsp?RH=1245685383719>

Der Studienverlauf ohne Modulbeschreibung befindet sich zudem im Anhang.



PRESENTATION

STUDIES

RESEARCH

BUSINESS

STUDENT LIFE

Degree Biomedical Engineering (BIOMED) - Semester 3

Curriculum->BIOMED->Semester 3

Courses and group of courses name

ECTS

hours per student

SEMESTER 3 BIOMED

30.0

347.33333333333333

UE Measurement system

6.0

68.0

Common Courses

5.0

54.0

Converters (CAN, CNA) - 4PMBCON3

1.0

14.0

BE Electronics for measurement systems - 4PMBEM10

1.0

12.0

Electronics for Measurement Systems - 4PMBEMS6

3.0

28.0

Being adapted to the sector (choice of 1 child element)

1.0

14.0

Upgrade if cursus PEI

1.0

14.0

Mechanics if PET common core - 4PMBMEC9

1.0

14.0

Upgrade if cursus PMP

1.0

14.0

Automatics if PMP common core - 4PMBAUT9

1.0

14.0

UE Engineering Sciences Semester 3

6.0

74.0

Being adapted to the sector (choice of 1 child element)

1.5

18.0

Upgrade if cursus PEI

1.5

16.0

Thermodynamics if PET Core - 4PMBTHE3

1.5

16.0

Upgrade if cursus PMP

1.5

20.0

4PMNEM10: Electromagnetism for PMP common core - 4PMXEM14

<u>Common Courses</u>	4.5	56.0	1.5	20.0
<u>Numerical methods : simulations - 4PMBNM36</u>		4.5	56.0	
<u>UE Applied physics Semester 3</u>		6.0	64.0	
<u>Introduction to subatomic physics - 4PMBISP6</u>			1.0	12.0
<u>Optics - 4PMBOPT9</u>			2.0	20.0
<u>Physics of semiconductors & semiconductors devices - 4PMBPSS4</u>			3.0	32.0
<u>UE Biology (S3)</u>	6.0	48.0		
<u>Labwork : Molecular biology & Biochemistry - 4PMBLMB6</u>			3.0	24.0
<u>Molecular Biology - 4PMBMBI6</u>			3.0	24.0
<u>UE Languages and Professionalizing Semester 3</u>	6.0	93.33333333333333		
<u>Obligatory courses UE LFP semester 3</u>		4.0	56.0	
<u>English Semester 3 - 4PMCAN32</u>		2.0	24.0	
<u>BULATS 2A-TC - 4PMCBULA</u>		0.0	4.0	
<u>Sport S3 - 4PMCEP32</u>		1.0	24.0	
<u>Worker training evaluation - 4PMCREX3</u>		1.0	4.0	
<u>Choose : CECA(year) or Strategy-Marketing(S3) (choice to add up 2.0 ECTS)</u>	2.0	37.33333333333333		
<u>Business Marketing (in English) - 4PMCBMA6</u>			2.0	20.0
<u>Business and activity development (S3) - 4PMCCCE35</u>			2.0	24.0
<u>Marketing/Consulting - 4PMCMAR3</u>			1.0	16.0
<u>Strategy - 4PMCSTR3</u>			1.0	8.0
<u>Optional courses UE LFP semester 3 (choice of between 0 and 1 child element)</u>			0.0	0.0
<u>Remedial English for B2 Level(optional) - 3PMXSOU6</u>			0.0	12.0
<u>Second Modern language - LV2 - 4PMCLV29</u>			1.5	0.0



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Degree Biomedical Engineering (BIOMED) - Semester 4

Curriculum - BIOMED - Semester 4

Courses and group of courses name

ECTS

hours per student

Semester 4 BIOMED

30.0

376.0

UE Signal processing

6.0

74.0

Data acquisition (Labview) - 4PMBDAQ9

2.0

24.0

Digital Signal Processing - 4PMBDSP6

2.5

30.0

Signal processing Lab - 4PMB SPL6

1.5

20.0

UE Engineering Sciences Semester 4

6.0

82.0

Image sensors - 4PMBISE6

1.5

18.0

Machine communication and networks - 4PMBMCN6

1.0

16.0

Numerical methods : simulation project - 4PMBNM46

2.0

28.0

Quality-reliability - 4PMBQRE6

1.5

20.0

CHOOSE ONE (choice of 1 child element)

6.0

70.0

UE Medical imaging and therapy speciality

6.0

62.0

Medical Imaging Labwork - 4PMBMIL6

2.0

16.0

Nuclear Magnetic Resonance and Magnetic Resonance Imaging - 4PMBNMR6

2.0

22.0

Particle-Rays Matter Interaction - 4PMBPMI6

2.0

24.0

UE Nanobiology and Medical Devices speciality

6.0

78.0

<u>Chemical bond & reactivity - 4PMBCBR6</u>	1.5	14.0
<u>Devices technology - 4PMBDTE6</u>	0.0	8.0
<u>Modelling in systems biology - 4PMBMSB4</u>	1.5	16.0
<u>Nanobiology labwork (BIO-S4) - 4PMBNBL6</u>	3.0	40.0
<u>UE Biology Physiology (S4)</u>	6.0	66.0
<u>Cell Biology - 4PMBCBI6</u>	1.5	20.0
<u>Cell biology labwork - 4PMBCBL4</u>	1.0	8.0
<u>Molecular biology project - 4PMBMBP6</u>	2.0	24.0
<u>Physiology and Bioenergetics - 4PMBPB16</u>	1.5	14.0
<u>UE Languages and Professionalizing Formation 2</u>	6.0	84.0
<u>Obligatory courses UE LFP semester 4</u>	4.0	48.0
<u>English Semester 4 - 4PMCAN42</u>	2.0	24.0
<u>Sport S4 - 4PMCEP42</u>	2.0	24.0
<u>Choose : CECA(year) or Law-Financial (semester 4) (choice to add up 2.0 ECTS)</u>	2.0	36.0
<u>Business and activity development (S4) - 4PMCCCE45</u>	2.0	24.0
<u>Financial management - 4PMCDFI3</u>	1.0	10.0
<u>Law - 4PMCDRT1</u>	1.0	10.0
<u>Strategy & Finance (in English) - 4PMCSFI6</u>	2.0	20.0
<u>Optional courses UE LFP semester 4 (choice of between 0 and 1 child element)</u>	0.0	0.0
<u>Remedial English for B2 Level(optional) - 3PMXSOU6</u>	0.0	12.0
<u>Second Modern language - LV2 - 4PMCLV29</u>	1.5	0.0



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Degree Biomedical Engineering (BIOMED) - Semester 5

Curriculum->BIOMED->Semester 5

Courses and group of courses name

ECTS

hours per student

Semester 5 BIOMED

30.0 4694.0

UE BIOMED Commune tous parcours

6.0 62.0

6.0

62.0

Cell signaling and cancer biology - 5PMBCSC6

2.0 22.0

Introduction to neurosciences - 5PMBINE5

1.0 12.0

Respiratory, cardiac, renal physiology - 5PMBRCR5

3.0 28.0

(choice to add up 18.0 ECTS)

18.0 4566.0

Option Med. Imaging

18.0 230.0

UE Medical Imaging

6.0 74.0

Acoustics - 5PMBACO5

2.0 33.0

Magnetic resonance imaging Biomed - 5PMBMRI5

2.0 22.0

5PMSBIO: Bio-medical imaging - 5PMXMIP5

2.0 19.0

Engineering science (Option Medical Imaging)

6.0 85.0

Molecular markers for medical imaging - 5PMBMMI5

1.0 12.0

Numerical simulation and statistical data analysis UJF - 5PMBNSS6

3.0 44.0

Image Processing first Level - 5PMBTIM0

2.0 29.0

<u>UE Therapy</u>	6.0	71.0	
<u>Interaction Between Radiations and the living matter - 5PMBIRL5</u>			1.5 11.0
<u>Medical applications of radiations - 5PMBMAR5</u>			1.0 12.0
<u>Physics of detectors - 5PMBPDE5</u>			2.0 30.0
<u>Cell sensitivity to radiation lab work - 5PMBTBR5</u>			0.5 8.0
<u>Ultrasound Imaging and Thermotherapy - 5PMBULS5</u>			1.0 10.0
<u>Parcours Nanobiology</u>	18.0	303.0	
<u>UE Medical devices</u>	6.0	110.0	
<u>Biomaterials and Biocompatible surface Engineering - 5PMBBBS6</u>			1.0 20.0
<u>Characterization of (bio)molecular interactions. nanomaterials, surfaces and interfaces-UJF - 5PMBCBM6</u>			2.5 48.0
<u>Microfluidics - 5PMBMFL5</u>			1.0 14.0
<u>Microfluidics LAB - 5PMBMLA5</u>			0.5 8.0
<u>Surface Functionalization and electrochemisty (S5-biomed+PNS-UJF) - 5PMBSE5</u>			1.0 20.0
<u>UE Nanobiology</u>	6.0	72.0	
<u>Biosensors and Biochips - 5PMBBAB5</u>		2.0	20.0
<u>Biotechnology Labwork - 5PMBBLA6</u>		1.0	16.0
<u>Cell patterning lab-UJF - 5PMB CPL5</u>		1.0	16.0
<u>Optics for biological systems-UJF - 5PMB OBS5</u>		2.0	20.0
<u>UE Engineering Science Nanobio (Option Nanobio)</u>		6.0	121.0
<u>Experimental Projects - 5PMBEPR6</u>		2.0	80.0
<u>Molecular markers for medical imaging - 5PMBMMI5</u>		1.0	12.0
<u>Image processing-first level - 5PMXTIMO</u>		3.0	29.0
<u>Option Struc Bio</u>	18.0	228.0	
<u>UE Physics for Life Sciences</u>		6.0	74.0

<u>Magnetic resonance imaging Biomed - 5PMBMRI5</u>	2.0	22.0
<u>Physics of detectors - 5PMBPDE5</u>	2.0	30.0
<u>Optical spectroscopy - 5PMB SOP5</u>	2.0	22.0
<u>UE Structural Biology</u>	69.0	
<u>structural biology-UJF - 5PMBSBI5</u>	4.0	50.0
<u>5PMBSIO0: Bio-medical imaging - 5PMXMIP5</u>	2.0	19.0
<u>UE Engineering science (Option Structural Biology)</u>	6.0	85.0
<u>Molecular markers for medical imaging - 5PMBMMI5</u>	1.0	12.0
<u>Numerical simulation and statistical data analysis UJF - 5PMBNSS6</u>	3.0	44.0
<u>Image Processing first Level - 5PMBTIM0</u>	2.0	29.0
<u>UE Languages and Professional Formation</u>	6.0	66.0
<u>Mandatory courses UE LFP semester 5</u>	4.0	52.0
<u>English or other language - 5PMCANG0</u>	2.0	24.0
<u>Starter Amphitheater - 5PMCAST6</u>	0.0	4.0
<u>BULATS 3A-TC - 5PMCBULA</u>	0.0	4.0
<u>Management & Leadership - 5PMCMANO</u>	2.0	16.0
<u>Preparation for professional insertion - 5PMCPPI0</u>	0.0	4.0
<u>Sciences of enterprise management (choice of 1 child element)</u>	2.0	14.0
<u>Scheme Management Simulation - 5PMCSMEA</u>	2.0	16.0
<u>Strategy - 5PMCSMEB</u>	2.0	16.0
<u>Juridic aspects linked to innovation - 5PMCSMEC</u>	2.0	16.0
<u>Economy and society - 5PMCSMED</u>	2.0	16.0
<u>Quality - 5PMCSMEE</u>	2.0	16.0
<u>Coordination of personal activity and management of time - 5PMCSMEF</u>	2.0	16.0

[Partnership negotiation - 5PMCSMEH](#)

2.0 16.0

[Optional courses UE LFP semester 5 \(Except for FAME students\) \(choice of between 0 and 1 child element\)](#)

0.0 0.0 0.0

[Remedial English for B2 Level\(optional\) - 3PMXSOU6](#)

0.0 12.0

[- 5PMCEPS0](#)

1.5 24.0

[- 5PMCFLE5](#)

2.0 20.0

[Bibliographic Project - 5PM CPRB5](#)

2.0 24.0

[Energy school \(réservé MANUJEN & EMINE\) - 5PMJENS6](#)

2.0 10.0

VERSION FRANÇAISE

[Voir la version française de cette page](#)

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