

# Master of Science and Technology CSE BME

## Biomedical engineering track

### 1st year - 70ECTS

#### 1st Semester S7:

Name	Course unit code	Year	Semester	Hour	ECTS	Teacher/[Responsible]
Transport phenomena	TRPH	1	1	32	4	O. Boiron, F. Schwander
Computer Sciences and Num. methods	CSNM	1	1	24	3	B. Favier
Introduction to clinical medicine	CLMD	1	1	24	3	L. Dambricourt, A. Janet, C. Jacquet, M. Lebret/[J. Fade, O. Boiron]
Introduction to material science and structural design	MTSC	1	1	24	3	Y. Knapp, S. Bourgeois
Introduction to biomedical signal processing	SIPR	1	1	24	3	C. Fossati, T. Gaidon
Engineering & biological systems	ENBS	1	1	24	3	P. Santucci
Wave propagation	WAPG	1	1	24	3	L. A. Castaneda
Industrial engineering & Soft skills	IES7	1	1	45	4	J. Zimmermann, L. Serfaty, A. Tinel / [J. Fade, O. Boiron, F. Schwander]
Train'Eng in CSE	TCS7	1	1	62	6	Various lecturers/ [J. Fade, O. Boiron, F. Schwander]
Languages	LAN7	1	1	20	2	V. Hamel
Winter Lab internship	STG7	1	1	8 weeks	6	

#### 2nd Semester S8:

Name	Course unit code	Year	Semester	Hour	ECTS	Teacher
The living bricks	LBRI	1	2	78	6	/ [M. Jaeger]
Imaging and wave therapy	IMAG	1	2	68	5	C. Fossati, E. Franceschini, C. Baron, H. Rigneault, J. Fade / [J. Fade]
Bioinformatics	BIOF	1	2	68	5	/ [J. Fade]
Bio Planet	BIOP	1	2	46	6	Various lecturers / [J. Fade, M. Jaeger]
Languages	LAN8	1	2	20	2	V. Hamel

Name	Course unit code	Year	Semester	Hour	ECTS	Teacher
<a href="#">Summer internship</a>	STG8	1	2	8 weeks	6	[J. Fade, O. Boiron, F. Schwander]



The detailed syllabus of the second semester of 1st year (M1) can be downloaded [here](#)

## 2nd year - 70ECTS

### 3rd Semester S9:

Name	Course unit code	Year	Semester	Hour	ECTS	Teacher
<a href="#">Computer Sciences &amp; data sciences</a>	CSDS	2	1	24	3	T. Artières
<a href="#">Advanced imaging</a>	IFPR	2	1	24	3	L. Abel-Tiberini
<a href="#">Biomechanics</a>	BIOM	2	1	24	3	<a href="#">V. Deplano</a>
<a href="#">Integrated design of biomedical systems</a>	INDE	2	1	24	3	C. Jalain
<a href="#">Advanced image processing</a>	IMAB	2	1	24	3	M. Roche
<a href="#">Numerical modeling for BME</a>	NUMB	2	1	24	3	<a href="#">V. Deplano</a> , <a href="#">C. Guivier</a> , J-M Rossi
<a href="#">Advanced material sciences and structural design</a>	ADMS	2	1	24	3	Y. Knapp
<a href="#">Sensors &amp; biomedical monitoring</a>	SEN1	2	1	12	1.5	A. Khalighi
<a href="#">IoT for medicine</a>	SEN2	2	1	12	1.5	A. Khalighi
<a href="#">Elective course</a>	ELC9	2	1	24	3	
<a href="#">Inter. elective course</a>	ELFO	2	1	12	1	
<a href="#">Industrial engineering</a>	INE9	2	1	100	6	
<a href="#">French</a>	LAN9	2	1	20	2	V. Hamel
<a href="#">Project - Lab work</a>	PRO9	2	1	100	2	
<a href="#">Seminars</a>	SEM9	2	1		2	

### 4th Semester S10:

Name	Course unit code	Year	Semester	Hour	ECTS	Teacher
<a href="#">Master thesis &amp; internship</a>	THES	2	2	4-6 months	30	

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