

Master of Health Sciences (MHSc) – Master Programme in Biomedical Engineering: Biomechanics and Imaging

Studies include compulsory intermediate and advanced studies, advanced module's studies and optional studies. The student executes compulsory studies 50 ECTS credits, studies of chosen advanced module 30 ECTS credits, master's thesis 30 ECTS credits, and optional studies so that the total extent of the degree is at least 120 ECTS credits. Studies are executed according to the personal study plan with individual timetable depending on the optional studies. Some of the courses are held only every second year.

Advanced Studies 30 ECTS Credits

Advanced studies are collected from the field of biomechanics and imaging. Student selects courses worth of 20 ECTS credits. Project work is compulsory part of biomedical engineering advanced studies.

Optional Studies about 10 ECTS Credits

Optional studies will be executed so that the total extent of the degree is at least 120 credits. Optional studies can be chosen from other advanced module or from other intermediate and advanced studies that support the degree. In the case of optional studies, if necessary, the student must agree with the organizing department for the participation for the course.

Language Studies 2-10 ECTS Credits

Student need to include Finnish language courses worth of 2-10 ECTS credits into the personal study plan if not native Finnish speaking person nor executed compensatory courses earlier.

Recommended Optional Studies:

080923S Physics in Radiation Therapy 5 ECTS cr (P4)
080922S Microscopy and Spectroscopic Imaging 5 ECTS cr (P3)
080927S Connected Health and mHealth 5 op (P1)
747604S Introduction to Biocomputing 3 ECTS cr (P2)
764322A Cell Membrane Biophysics 7 ECTS cr (P1-P2)
764629S Identification of Linear Systems 5 ECTS (P3)
031044A Mathematical Methods 3 ECTS cr (P1-P3)
464085A Patenting 5 ECTS cr (P3-P4)
812671S Usability Testing 5 ECTS cr (P3-P4)
521238S Optoelectronic Measurements 5 ECTS cr (P4)
521412A Digital Techniques I 5 ECTS cr (P1-P2)
521432A Electronics Design I 5 ECTS cr (P1-P2)
555242A Product Development 5 ECTS cr (P1-P3)
580201A Biomedical Engineering Programming Study 5 ECTS cr
580202S Biomedical Engineering Project 5-10 ECTS cr

Study Structure 2017-19

2 years, 120 ECTS Credits

Course Name and Recommended Timing	1st Autumn		1st Spring		2nd Autumn		2nd Spring	
	1	2	3	4	1	2	3	4
Complementary Studies 0-60 ECTS Credits								
Compulsory Studies 50 ECTS Credits								
58XXXXA Introduction to Biomedical Engineering 5 ects	5							
521467A Digital Image Processing 5 ects	5							
521124S Sensors and Measuring Techniques 5 ects		5						
080920S Diagnostic Imaging 5 ects		5						
521273S Biosignal Processing I 5 op ects		5						
041201A Basics in eHealth 5 ects			5					
521093S Biomedical Instrumentation 5 ects			5					
080925A Anatomy and Physiology for Biomedical Engineering 5 ects				5				
580121A Practical Training 2 2-5 ects				5				
080928S Biomedical Engineering Research Methods and Seminar 5 ects					5			
Advanced Studies 30 ECTS Credits								
Biomechanics and Imaging 20 ECTS Credits								
080915S Tissue Biomechanics 5 ects	5							
080916S Biomechanics of Human Movement 5 ects			5					
080921S Biomedical Ultrasound 5 ects			5					
080926A Introduction to Biomedical Imaging Methods 1-3 ects				3				
521240S Biophotonics and Biomedical Optics 5 ects					5			
080924S Biomaterials 2-5 ects						5		
Complementary Project Work for Advanced Studies 10 ECTS Credits								
080917S Project in Biomedical Technology 10 ects					5	5		
080918S Project in Medical Imaging 10 ects					5	5		
080919S Project in Health Technology 10 ects					5	5		
Language Studies 2-10 ECTS Credits								
900017Y Survival Finnish Course 2 ects	2							
900013Y Beginners' Finnish Course 1 3 ects		3						
900053Y Beginners' Finnish Course 2 5 ects			5					
Master's Thesis and Maturity Test 30 ECTS Credits								
580213S Master's Thesis 30 ects							15	15
580211S Maturity Test 0 ects								0
Compulsory Studies and Project Work in Total	10	15	10	10	10	5	15	15
Advanced, Language and Optional (0-10 ects) Studies in Total	5	0	5	5	5	10	0	0
Credits During Period	15	15	15	15	15	15	15	15
Credits During Semester	30		30		30		30	
Credits During Academic Year	60				60			
Degree in Total 120 ECTS Credits								