

INSTITUTE OF GRADUATE PROGRAMS, DEPARTMENT OF BIOMEDICAL ENGINEERING

BIOMEDICAL ENGINEERING MASTER OF SCIENCE COURSES (WITH THESIS)

ELECTIVE COURSES

Fall Semester Courses					Spring Semester Courses						
Course Code	Course Name	LT	LB	CR	ECTS	Course Code	Course Name	LT	LB	CR	ECTS
BMM701	Basic Mathematics for Biomedical Sciences	3	0	3	8	BMM702	Medical Biology and Genetics	3	0	3	8
BMM703	Fundamentals of Medical Informatics	3	0	3	8	BMM704	Nonlinear Physiological Control Systems	3	0	3	8
BMM705	Medical Imaging and Analysis Techniques	3	0	3	8	BMM706	Biomedical Instrumentation Techniques and Applications	3	0	3	8
BMM707	Introduction to Biomedical Optics	3	0	3	8	BMM708	Statistical Data Analysis	3	0	3	8
BMM709	Fundamentals of Biomedical Engineering	3	0	3	8	BMM710	Clinical Engineering	3	0	3	8
BMM711	Numerical Methods and MATLAB Programming	3	0	3	8	BMM712	Evolutionary Optimization Methods	3	0	3	8
BMM713	Biomaterials	3	0	3	8	BMM714	Tissue Engineering	3	0	3	8
BMM715	Anatomy and Physiology	3	0	3	8	BMM716	Applied Biomechanics	3	0	3	8
BMM717	Biomechanics and Tissue Biomechanics	3	0	3	8	BMM718	Biomechanics of Motion	3	0	3	8
BMM719	Modeling of Biomedical Systems	3	0	3	8	BMM720	Digital Image Processing with MATLAB	3	0	3	8
BMM721	System Theory for Biomedicine Sciences	3	0	3	8	BMM722	Biomedical Systems	3	0	3	8
BMM723	Artificial Neural Network Applications in Biomedical Engineering	3	0	3	8	BMM724	Biomedical Imaging Systems	3	0	3	8
BMM725	Signal Processing and Applications	3	0	3	8	BMM726	Biomedical Signal Processing	3	0	3	8
BMM727	Computational Cell Biology	3	0	3	8	BMM728	Basic Mathematics in Engineering	3	0	3	8
BMM729	Photonics and Lasers	3	0	3	8	BMM730	Organic Chemistry for Biomedical Engineering	3	0	3	8
BMM731	Advanced Biochemistry	3	0	3	8	BMM732	Mass Spectrometry, Clinical and Biomedical Applications	3	0	3	8
BMM733	Introduction to Optoelectronic Devices	3	0	3	8	BMM734	Design and Materials for Manufacturing	3	0	3	8
BMM735	Failure Analysis in Engineering	3	0	3	8	BMM736	Proteomics in Medical Research	3	0	3	8
BMM737	Biodegradable Implant Materials	3	0	3	8	BMM738	Advanced Database Management Systems	3	0	3	8
BMM739	Machine Learning for Biomedical Applications	3	0	3	8	BMM740	Biomechatronics	3	0	3	8

COMPULSORY COURSES

Institutional Compulsory Courses					Departmental Compulsory Courses						
Course Code	Course Name	LT	LB	CR	ECTS	Course Code	Course Name	LT	LB	CR	ECTS
LUEE701	Scientific Research Techniques and Scientific Ethics	3	0	3	8	BMM797	M.Sc. Seminar	0	2	0	6
						BMM7098D	M.Sc. Course Field of Specialization	4	0	0	4
						BMM7098T	M.Sc. Thesis Field of Specialization	4	0	0	4
						BMM799	M.Sc. Thesis Research	0	1	0	26

BIOMEDICAL ENGINEERING DOCTOR OF PHILOSOPHY COURSES

ELECTIVE COURSES

Fall Semester Courses					Spring Semester Courses						
Course Code	Course Name	LT	LB	CR	ECTS	Course Code	Course Name	LT	LB	CR	ECTS
BMM801	Basic Mathematics for Biomedical Sciences	3	0	3	8	BMM802	Molecular and Cell Biology for Biomedical Engineers	3	0	3	8
BMM803	Medical Biology and Genetics	3	0	3	8	BMM804	Clinical Engineering	3	0	3	8
BMM805	Medical Imaging and Analysis Techniques	3	0	3	8	BMM806	Antibiotics	3	0	3	8
BMM807	Advanced Biomedical Signal Processing and Applications	3	0	3	8	BMM808	Advanced Biopolymers	3	0	3	8
BMM809	Analog Circuits in Biomedical Instrumentation	3	0	3	8	BMM810	Advanced Biomedical Image Processing	3	0	3	8
BMM811	Biomedical Optical Imaging	3	0	3	8	BMM812	Magnetic Resonance Imaging	3	0	3	8
BMM813	Biomedical Instrumentation Techniques and Applications	3	0	3	8	BMM814	Chemical, Biological and Nuclear Processes	3	0	3	8
BMM815	Advanced Biomaterials	3	0	3	8	BMM816	Biomaterials Production by Powder Metallurgy	3	0	3	8
BMM817	Pharmaceutical Chemistry and Design	3	0	3	8	BMM818	Electroneurophysiological Signals and Applications	3	0	3	8
BMM819	Advanced Numerical Methods and MATLAB Programming	3	0	3	8	BMM820	Advanced Artificial Neural Network Applications in Biomedical Engineering	3	0	3	8
BMM821	Advanced Anatomy and Physiology	3	0	3	8	BMM822	Computational Biology and Bioinformatics	3	0	3	8
BMM823	Advanced Biomechanics	3	0	3	8	BMM824	Bioceramic Coatings for Medical Implants	3	0	3	8
BMM825	Tissue and Cell Engineering	3	0	3	8	BMM826	Plastic Deformation in Metals	3	0	3	8
BMM827	Clinical Applications of Bioceramics	3	0	3	8	BMM828	Mass Spectrometry-Based Imaging Techniques	3	0	3	8
BMM829	Finite Element Analysis	3	0	3	8	BMM830	Production of Nanofibers and Their Biomedical Engineering Applications	3	0	3	8

COMPULSORY COURSES

Institutional Compulsory Courses					Departmental Compulsory Courses						
Course Code	Course Name	LT	LB	CR	ECTS	Course Code	Course Name	LT	LB	CR	ECTS
LUEE801	Scientific Research Techniques and Scientific Ethics	3	0	3	8	BMM896	Ph.D. Qualification	0	1	0	26
						BMM897	Ph.D. Seminar	0	2	0	6
						BMM8098D	Ph.D. Course Field of Specialization	4	0	0	4
						BMM8098T	Ph.D. Thesis Field of Specialization	4	0	0	4
						BMM899	Ph.D. Thesis Research	0	1	0	26