1ST SEMESTER

Course number		HOURS/WEEK	ECTS
9001	Mathematical Analysis I	5	6
9002	Analytic Geometry and Linear Algebra	5	6
9004	Physics I (Mechanics) and Laboratory	6 (5+1)	7
9006	Engineering Mechanics I (Statics)	3	4
9003	Introduction to Computer Programming	4	5
9301	Methods of Computer Design	3	4
	Sum:	26	32
	Foreign language		
9008	English	2	
9009	French	2	
9010	German	2	
9011	Italian	2	

2nd SEMESTER

Course number	COURSE	HOURS/WEEK	ECTS
9012	Mathematical Analysis II	4	5
9029	Linear Algebra and Applications	4	5
9015	Physics II (Electromagnetism I)	5	6
9344	Physics Laboratory I	2	2
9134	Mechanics of Materials I	3	4
9014	Design and Development of Computer Applications	4	5
9106	Software for Mathematics and Physics	3	3
9345	Special Theory of Relativity	2	3
	Sum:	27	33
	Foreign language		
9025	English	2	
9026	French	2	
9027	German	2	
9028	Italian	2	

3rd SEMESTER

Course number	COURSE	HOURS/WEEK	ECTS
9030	Mathematical Analysis III	4	5
9013	Ordinary Differential Equations	4	5
9041	Numerical Analysis I and Laboratory	6 (5+1)	7
9033	Physics III (Oscillations-Waves) and Laboratory	5 (4+1)	6
9092	Thermodynamics	3	4
9302	Mechanics of Materials II (Strength of Materials)	3	4
	Electives. Students have to choose one course from the following:		
9007	Introduction to Philosophy	2	3
9019	History of Economic Thought	2	3
9018	Introduction to the History of Science and Technology	2	3
	Sum:	27	34
	Foreign language		
9037	English	2	
9038	French	2	
9039	German	2	
9040	Italian	2	

4th SEMESTER

Course number	COURSE	HOURS/WEEK	ECTS
9042	Complex Analysis	4	5
9346	Introduction to Partial Differential Equations	4	5
9347	Applied Statistics	4	5
9045	Physics IV (Quantum Mechanics I)	4	5
9135	Engineering Mechanics IV (Dynamics)	4	5
9348	Computer programming with applications in Engineering	4	5
Electives. Students have to choose one course from the following:			
9024	Philosophy of Science	2	3
9047	Sociology of Science	2	3
9036	Economics I (Microeconomics)	2	3
	Scientific terminology in:		
9049	English	2	2
9050	French	2	2
9051	German	2	2
9052	Italian	2	2
	Sum:	28	32(33)

APPLIED MATHEMATICS 5th SEMESTER

Course number	COURSE	HOURS/WEEK	ECTS
	COMPULSORY		
9032	Probability	4	5
9058	Algebra and Applications	4	6
	Electives. Students have to choose five courses from the following:		
9080	Dynamical Systems	4	5
9060	Set Theory	4	5
9303	Computer Data Analysis	4	5
9305	Numerical Linear Algebra	4	5
9059	Information Theory and Coding	4	5
9304	Fundamental concepts of computer science	4	5
9057	Discrete Mathematics	4	5
9056	Continuum Mechanics	4	5
9062	Analytical Mechanics	4	5
9172	Principles of Teaching	4	5
	OPTIONAL		
9219	Technology and its History	3	4
	Sum:	28	36

APPLIED MATHEMATICS 6h SEMESTER

Course number	COURSE	HOURS/WEEK	ECTS
	COMPULSORY		
9053	Real Analysis	4	6
9349	Mathematical Statistics	4	6
	Electives. Students have to choose four courses from the following:		
9151	Optimization	4	5
9230	Algebra II and Applications	4	5
9350	Partial Differential Equations II	4	5
9084	Matrix Analysis and Applications	4	5
9112	Stochastic Processes	4	5
9214	Data Structures	3	4
9085	Automata and Formal Grammars	4	5
9086	Theory of Elasticity	3	4
9176	Fluid mechanics	3	4
9137	Structural Mechanics	4	5
9157	Principles of Teaching Methodology - Teaching Methods of Mathematics	3	4
9048	Economics II (Macroeconomics)	3	4
	Sum	24	32(30)

APPLIED MATHEMATICS 7th SEMESTER

Course number	COURSE	HOURS/WEEK	ECTS
	COMPULSORY		

9054	Numerical Analysis II and Laboratory	4	6
9078	Functional Analysis I	4	6
	Electives. Students have to choose four courses from the following:		
9081	Financial Mathematics	4	5
9173	Measure Theory and Integration	4	5
9120	Introduction to Operational Research	4	5
9114	Regression Analysis	4	5
9082	Probability Theory	4	5
9116	Algorithms and Complexity	4	5
9144	Integral Equations and Applications	4	5
9061	Experimental mechanics of materials, Fracture mechanics and laboratory	3	4
9088	Introduction to Inelasticity	3	4
9306	Wave propagation in materials	3	4
9307	Introduction to Bioengineering	3	4
9308	System Dynamics and Oscillations	3	4
9309	Data Bases	4	5
9136	Philosophy of Mathematics	2	3
9351	Sampling	4	5
9310	Economics III (Applied Economics)	4	5
	Sum:	24	32(30)

APPLIED MATHEMATICS 8th SEMESTER

COURSE NUMBER	COURSE	HOURS/WEEK	ECTS
	COMPULSORY		
9146	Differential Geometry of Curves and Surfaces	4	6
	Electives. Students have to choose five courses from the following:		
9148	Mathematical Modeling I	4	5
9119	Mathematical Financial Theory	4	5
9140	Functional Analysis II	4	5
9147	Operator Theory	4	5
9111	Optimal Control	4	5
9181	Numerical Methods for Partial Differential Equations	4	5
9142	Linear Models and Designs	4	5
9145	Time Series Analysis	4	5
9352	Econometrics	4	5
9353	Reliability	4	5
9118	Graph Theory	4	5
9184	Algorithmic Geometry	4	5
9083	Mathematical Logic	4	5
9117	Computational Mechanics I	4	5
9186	Mechanics of Coupled Fields	3	4
9189	Experimental mechanics of materials – Fracture mechanics and laboratory	3	4
9222	Mathematical Simulation in Mechanics	4	5
9354	Biomechanics of the musculoskeletal system	3	4
9355	Complex Analysis II	4	5
9141	Models of Computation	3	4
9149	Special Topics in Discrete Mathematics	4	5
9????	Number Theory	4	5
9????	Topics in Algebra and Geometry	3	4
9143	Applications of Logic in Computer Science	4	5

9215	New Technologies in Education	2	3
9356	History of Physics in the 19th and 20th Century	2	3
9357	Economics IV (Economics of Technology)	3	4
9228	Environment and Development	3	4
	Sum:	24	31(29)

APPLIED MATHEMATICS 9th SEMESTER

Course number	COURSE	HOURS/WEEK	ECTS
Electives. Students have to choose four courses from the following:			
9183	Stochastic Differential Equations and Applications	4	5
9138	Design and Analysis of Control Systems	4	5
9175	Non linear Analysis	4	5
9312	Topology and Applications	4	5
9224	Special Topics in Analysis	4	5
9313	Special Topics in Algebra	4	5
9177	Reliability and Survival Models	4	5
9314	Computational Methods in Statistics	4	5
9315	Statistical Quality Control	4	5
9316	Statistical Analysis and Data Acquisition	4	5
9115	Communication Networks	4	5
9131	Internet Technologies	4	5
9178	Cryptography and Complexity	4	5
9180	*Mechanics of seismic phenomena*	*3*	*4*
9185	Advanced Dynamics	4	4
9187	Discs, Shells, Plates	4	4
9152	Computational Mechanics II	4	4
9188	Special Chapters in Computational Mechanics	4	4
9153	Composite Materials	4	4
9317	Computational Fluid Mechanics	3	4
9318	*Mathematical modeling (simulation) in Biomechanics*	*3*	*4*
9319	Harmonic Analysis	4	5
9320	Economics V (Business Economics & Entrepreneurship)	4	5
9193	Law	4	5
9194	History of Mathematics	4	5
9321	Environmental Policy	4	5
9322	Project	3	5
OPTIONAL			
9538	Practical Training		5
	Sum:	16	20(18)

APPLIED PHYSICS 5th SEMESTER

Course number	COURSE	HOURS/WEEK	ECTS
COMPULSORY			
9093	Electromagnetic Theory II	4	6
9077	Quantum Mechanics II	4	6
9123	Statistical Physics	4	5

9095	Optics and Laboratory	4	5
9323	Modern Physics laboratory	3	4
9075	General Chemistry	3	4
	Sum:	22	30
Elective (extra course).			
9174	Educational Principles	3	4
OPTIONAL			
9226	Technology and its History	3	4

APPLIED PHYSICS 6th SEMESTER

Course number	COURSE	HOURS/WEEK	ECTS
COMPULSORY			
9206	Fluid Mechanics	4	5
9094	Atomic and Molecular Physics and Laboratory	4	5
9074	Condensed Matter Physics and Laboratory	4	5
9161	Physics and Technology of lasers and Laboratory	4	5
Electives. Students have to choose two courses from the following:			
9097	Group theory in Physics (Symmetries in Physics)	4	5
9167	Signal Analysis	4	5
9102	Theory of Elasticity	3	4
9165	Biophysics	4	5
9171	Principles of Teaching Methodology - Teaching Methods of Physics	3	4
9048	Economics II (Macroeconomics)	3	4
	Sum:	23(24)	29(30)

APPLIED PHYSICS 7th SEMESTER

Course number	COURSE	HOURS/WEEK	ECTS
COMPULSORY			
9324	Nuclear Physics and Laboratory	4	6
9325	Elementary Particles and Laboratory	4	6
9326	Materials Science	4	5
Electives. Students have to choose three courses from the following:			
9068	Computational Physics I	4	5
9160	Detecting and Accelerating Systems	4	5
9133	Optoelectronics	4	5
9110	Dielectric, Optical and Magnetic Properties of Materials	4	5
9327	Mechanics of continuous Media	3	4
9328	Introduction to Inelasticity	3	4
9329	Wave propagation in Materials	3	4
9330	Introduction to Bioengineering	3	4
9331	System Dynamics and Oscillations	3	4
9332	Integral Equations and Applications	4	5

9072	Analytical Mechanics	4	5
9071	Philosophy of Physics	2	3
9333	Economics III (Applied Economics)	3	4
	Sum:	23(24)	31(32)

APPLIED PHYSICS 8th SEMESTER

COURSE NUMBER	COURSE	HOURS/WEEK	ECTS
	COMPULSORY		
9109	Electronics and laboratory I	4	5
	Electives. Students have to choose five courses from the following:		
9195	Elementary Particles II	4	5
9358	General Theory of Relativity- Cosmology	4	5
9203	Computational Physics II	4	5
9159	Nuclear Physics and Applications	4	5
9125	Applications of Ionizing Radiation in Medicine and Biology	4	5
9166	Physics of Electronic Devices	4	5
9101	Principles of Microwave Transmission and Optical Signals	4	5
9162	Polymers and Composite Materials	4	5
9129	Computational Mechanics I	4	5
9208	Mechanics of Coupled Fields	3	4
9158	Physics Seminar	4	5
9099	Characterization methods of materials	4	5
9202	Introduction to Medical Imaging	4	5
9137	Structural Mechanics	4	5
9359	Biomechanics of the musculoskeletal system	3	4
9070	Experimental Mechanics of Materials – Fracture Mechanics and Laboratory	3	4
9217	New Technologies in Education	3	4
9360	Economics IV (Economics of Technology)	2	3
9170	History of 19th and 20th Century Physics	2	3
9229	Environment and Development	3	4
	Sum:	24	30

APPLIED PHYSICS 9th SEMESTER

Course number	COURSE	HOURS/WEEK	ECTS
	COMPULSORY		
9334	Electronics and Laboratory II	4	5
9335	Electromagnetic Fields	4	5
	Electives. Students have to choose four courses from the following:		
9163	Theoretical Physics	4	5
9343	Many Body Physics	4	5
9197	Nuclear Technology	4	5
9198	Application of Lasers in Biomedicine and the Environment	4	5

9128	Introduction to Communication Networks	4	5
9200	New Technological Materials	4	5
9201	Microsystems and Nanaotechnology	4	5
9336	Mechanics of Seismic Phenomena	3	4
9199	Introduction to Medical Physics	4	5
9204	Pattern Recognition and Neural Networks	4	5
9211	Introduction to Network Technologies	3	4
9096	Experimental Physics Techniques	4	5
9168	Computational Mechanics II	4	5
9337	Design and Analysis of Control Systems	4	5
9205	Environmental Physics	4	5
9338	Mathematical modeling (simulation) in Biomechanics	3	4
9339	Computational Fluid Mechanics	3	4
9340	Composite Materials	4	5
9341	Advanced Dynamics	4	5
9342	Discs, Shells, Plates	4	5
9209	Law	4	5
9210	Environmental Policy	4	5
9132	Economics V (Business Economics & Entrepreneurship)	4	5
OPTIONAL			
9538	Practical Training		5
	Sum:	22(24)	30(26)