INCOMING STUDENTS

List of courses
2021-2022

BACHELORS

MASTERS

www.isel.pt

Biomedical Engineering

Students can select courses from all programs. Please note that changes may occur.

Curricular units in Portuguese Language with tutorial support in English or in English Language

Code	Name	ECTS	Semester
4084	Seminars in Biomedical Engineering	3.0	Summer - 6th
4085	Biomedical Engineering Project	8.0	Summer - 6th

Curricular units in Portuguese Language

Code	Name	ECTS	Semester
4043	Calculus	6.5	Winter - 1st
4044	Linear Algebra and Analytical Geometry	6.0	Winter - 1st
4045	General Chemistry	6.5	Winter - 1st
4046	Programming	6.0	Winter - 1st
4047	Human Anatomy	5.0	Winter - 1st
4064	Numerical Calculus	5.0	Winter - 3rd
4065	Electromagnetism and Optics B	5.5	Winter - 3rd
4066	General Physical Chemistry	5.0	Winter - 3rd
4067	Biology and Histology	4.5	Winter - 3rd
4068	Applied Mechanics	5.5	Winter - 3rd
4069	Information Systems	4.5	Winter - 3rd
4076	Medical Physics	5.5	Winter - 5th
4077	Biomaterials	5.0	Winter - 5th
4078	Advanced Medical Therapies	5.0	Winter - 5th
4079	Biomedical Digital Signal Processing	5.5	Winter - 5th
4080	Fundamentals of Physiopathology	5.0	Winter - 5th
4059	Vector Analysis and Differential Equations	7.0	Summer - 2nd
4060	Biomedical Statistics	5.5	Summer - 2nd
4061	Fundamentals of Mechanics	5.5	Summer - 2nd
4062	General Chemistry	6.0	Summer - 2nd
4063	Biochemistry B	6.0	Summer - 2nd
4070	BIoanlysis	5.5	Summer - 4th
4071	Human Physiology	5.0	Summer - 4th
4072	Computer Aided Drawing	4.0	Summer - 4th
4073	Electronics and Instrumentation	5.0	Summer - 4th
4074	Signals and Systems	4.5	Summer - 4th
4075	Mechanics of Deformable Systems	6.0	Summer - 4th
4081	Biomechatronics	5.0	Summer - 6th
4082	Biomechanics B	5.0	Summer - 6th
4083	Medical Imaging Technology	5.0	Summer - 6th

Chemical and Biological Engineering

Students can select courses from all programs. Please note that changes may occur.

Curricular units in Portuguese Language with tutorial support in English or in English Language

Code	Name	ECTS	Semester
4048	Calculus	6.0	Winter - 1st
4122	Linear Algebra and Analytic Geometry	6.0	Winter - 1st
4120	Fundamentals Mechanics	5.5	Winter - 1st
4049	Computation and Programming	3.0	Winter - 1st
4124	Laboratory Techniques	4.5	Winter - 1st
3542	Numerical Calculus	5.0	Winter - 3rd
2265	Organic Chemistry	6.0	Winter - 3rd
2148	Analytical Chemistry	4.0	Winter - 3rd
4089	Chemical and Biological Engineering	5.0	Winter - 3rd
3530	Physical Chemistry	5.0	Winter - 3rd
4090	Industrial Microbiology	5.0	Winter - 3rd
2562	Chemical and Biological Reactors	6.0	Winter - 5th
2409	Transport Phenomena 2	5.0	Winter - 5th
4095	Separation Processes 2	5.0	Winter - 5th
4096	Facilities, Services and Security	5.0	Winter - 5th
4098	Materials Science	4.0	Winter - 5th
4086	Vector Calculus and Differential Equations	5.5	Summer - 2nd
4121	Biochemistry	4.5	Summer - 2nd
4087	Introduction to Chemical and Biological Engineering	4.5	Summer - 2nd
4126	Thermodynamics	6.5	Summer - 2nd
4088	Electromagnetism and Spectroscopy	4.5	Summer - 2nd
4091	Biotechnology	5.0	Summer - 4th
4131	Transport Phenomena 1	6.0	Summer - 4th
4092	Statistics and Chemometrics	5.0	Summer - 4th
4132	Process Control and Instrumentation	5.0	Summer - 4th
4093	Separation Processes 1	5.0	Summer - 4th
4094	Industrial Economics	4.0	Summer - 4th
4099	Operations Management	4.0	Summer - 6th
4135	Effluents Treatment Systems	5.0	Summer - 6th
4100	Process Simulation and Modelation	5.0	Summer - 6th

Elective Subjects. ERASMUS students should choose only two (one of each option) and confirm which ones will take place in 2022.

OPTION 1 - Engineering Sciences

Code	Name	ECTS	Semester
4222	Green Chemistry and Engineering	3.0	Summer - 6th
4223	Drinking and Industrial Water Treatment	3.0	Summer - 6th
	Integrated Waste Management	3.0	Summer - 6th
	Biosensores	3.0	Summer - 6th
	Energetics and Energy Generation	3.0	Summer - 6th

OPTION 2 - Complementary Sciences

Code	Name	ECTS	Semester
4224	Environmental Management	3.0	Summer - 6th
4225	Energy for Sustainability	3.0	Summer - 6th
	Initiation to Research and Development	3.0	Summer - 6th
	Society and Entrepreneurship	3.0	Summer - 6th
	Marketing and Innovation	3.0	Summer - 6th

Civil Engineering

Students can select courses from all programs. Please note that changes may occur.

Curricular units in Portuguese Language with tutorial support in English or in English Language

Code	Name	ECTS	Semester
3695	Linear Algebra and Analytic Geometry	5.5	Winter - 1st
3671	Calculus I	5.5	Winter - 1st
3696	General Drawing	4.0	Winter - 1st
3697	Computer Science and Programming	4.0	Winter - 1st
3698	Chemistry	5.5	Winter - 1st
3699	Geology Engineering	5.5	Winter - 1st
3684	Mathematical Methods for Civil Engineering	5.5	Winter - 3rd
3704	Physics Applied to Civil Engineering	4.0	Winter - 3rd
3674	Strengths of Materials I	4.0	Winter - 3rd
3675	Construction Materials Technology I	5.5	Winter - 3rd
3676	Topography	5.5	Winter - 3rd
3677	Hydraulics I	5.5	Winter - 3rd
3682	Management in Construction	4.0	Winter - 5th
3683	Retaining Structures and Foundations	4.0	Winter - 5th
3684	Structural Concrete I	5.5	Winter - 5th
3685	Thermal and acoustics on Buildings	5.5	Winter - 5th
3686	Transportation Infrastrutures I	5.5	Winter - 5th
3687	Urban Hydraulics I	5.5	Winter - 5th
3700	Probability and Statistics for Engineering	5.5	Summer - 2nd
3672	Calculus II	5.5	Summer - 2nd
3701	Drawing and Computer-Aided Design	4.0	Summer - 2nd
3702	General Physics	5.5	Summer - 2nd
3703	Statics	5.5	Summer - 2nd
3673	Urbanism and Transportation	4.0	Summer - 2nd
3678	Construction Management	4.0	Summer - 4th
3679	Strength of Materials II	4.0	Summer - 4th
3705	Structural Analysis	5.5	Summer - 4th
3680	Construction Materials Technology II	5.5	Summer - 4th
3706	Soil Mechanics	5.5	Summer - 4th
3681	Hydraulics II	5.5	Summer - 4th
3688	Management of Construction Works	5.5	Summer - 6th
3689	Structural Concrete II	4.0	Summer - 6th
3690	Design of Structures	5.5	Summer - 6th
3691	Construction and Rehabilitation Tecnologies	5.5	Summer - 6th
3692	Transportation Infrastrutures II	5.5	Summer - 6th
3693	Urban Hydraulics II	4.0	Summer - 6th

Municipal Technologies and Management

Students can select courses from all programs. Please note that changes may occur.

Curricular units in Portuguese Language with tutorial support in English or in English Language

Code	Name	ECTS	Semester
3748	Linear Algebra and Analytic Geometry	6.0	Winter - 1st
3749	Differential and Integral Calculus I	6.0	Winter - 1st
4148	Geologia	6.0	Winter - 1st
4149	Quimica Geral	6.0	Winter - 1st
4150	Sistemas de Informação Geográfica e Programação	6.0	Winter - 1st
4187	Construção Sustentável e Ambiente	6.0	Winter - 1st
4188	Gestão Urbanística e Licenciamento	6.0	Winter - 3rd
4189	Hidráulica Geral I	6.0	Winter - 3rd
4190	Planeamento e Conceção de Vias Municipais	6.0	Winter - 3rd
4191	Planeamento e Gestão Energética	6.0	Winter - 3rd
3772	Procurement of Services and Contracts	4.0	Winter - 5th
3773	Machinery and Equipment	4.0	Winter - 5th
3774	Municipal Energy Planning and Management	5.5	Winter - 5th
3775	Urban Hydraulics	5.5	Winter - 5th
3776	Waste Collection Systems	5.5	Winter - 5th
3777	Water Treatment	5.5	Winter - 5th
4181	Cálculo Diferencial e Integral 2	6.0	Summer - 2nd
4182	Comunicação, Liderança e Marketing	3.0	Summer - 2nd
4183	Física	6.0	Summer - 2nd
4184	Materiais e Produtos de Construção	6.0	Summer - 2nd
4185	Modelação e Simulação de Sistemas	3.0	Summer - 2nd
4186	Probabilidades e Estatística	6.0	Summer - 2nd
4192	Administração e Gestão Municipal	6.0	Summer - 4th
4193	Circulação,Tráfego e Transportes Públicos	6.0	Summer - 4th
4194	Gestão e Dimensionamento de Vias Municipais	6.0	Summer - 4th
4195	Hidrálica Geral 2	6.0	Summer - 4th
4196	Introdução á Análise de Estruturas	3.0	Summer - 4th
4197	Sistemas de Recolha de Resíduos e Limpeza Urbana	3.0	Summer - 4th
3778	Project Management and Public Works	5.5	Summer - 6th
3779	Management, Maintenance and Rehabilitation of Municipal Buildings	4.0	Summer - 6th
3780	Management, Valorization and Waste Treatment	5.5	Summer - 6th
3781	Environmental Planning and Management	5.5	Summer - 6th
3782	Seminar	4.0	Summer - 6th
3783	Wastewater Treatment	5.5	Summer - 6th

Electrical Engineering

Students can select courses from all programs. Please note that changes may occur.

Curricular units in Portuguese Language with tutorial support in English or in English Language

Code	Name	ECTS	Semester
3875	Linear Algebra	6.0	Winter - 1st
1915	Materials Science	5.5	Winter - 1st
3877	Computer Programming	5.5	Winter - 1st
2652	Digital Systems	5.5	Winter - 1st
3883	Electric Circuits Analysis II	5.5	Winter - 3rd
3884	Electromagnetism	6.5	Winter - 3rd
3885	Data Structures and Algorithms	5.5	Winter - 3rd
3892	Automation I	6.0	Winter - 5th
3152	Power Electronics	7.0	Winter - 5th
3891	Electric Machinery II	6.0	Winter - 5th
3327	Electrical Energy Networks	6.0	Winter - 5th
3327	Economics and Entrepreneurship	5.0	Winter - 5th
3879	Vector Analysis	6.0	Summer - 2nd
3880	Computing Tools for Engineering	4.5	Summer - 2nd
2320	Control Systems	7.0	Summer - 4th
3888	General Electronics	6.0	Summer - 4th
3889	Renewable Energy Sources	4.5	Summer - 4th
3891	Electric Machinery I	7.0	Summer - 4th
3898	Design of Electrical Installations	7.0	Summer - 6th
4022	Energy Efficiency and Audits	7.0	Summer - 6th
2887	Project Evaluation and Quality Tools	5.0	Summer - 6th

Computer Science and Computer Engineering

Students can select courses from all programs. Please note that changes may occur.

Curricular units in Portuguese Language with tutorial support in English or in English Language

Code	Name	ECTS	Semester
4176	Web Application Development	6.0	Winter - 5th
4177	Mobile Device Programming	6.0	Winter - 5th
4171	Computer Security	6.0	Winter - 5th
4179	Systems Virtualization Techniques	6.0	Winter - 5th
4164	Informatics and Computer Laboratory	6.0	Summer - 2nd
2641	Software Laboratory	6.0	Summer - 4th
4180	Project and Seminary	6.0	Summer - 6th

Elective Subjects. ERASMUS students should confirm which ones will take place in 2022.

Code	Name	ECTS	Semester
3321	Embedded Systems	6.0	Winter - 5th
2448	Internet Networks	6.0	Winter - 5th
3500	Introduction to Data Compression	6.0	Winter - 5th
2962	Logic and Computation	6.0	Winter - 5th
2963	Functional Programming	6.0	Winter - 5th
1811	Internet Programming	6.0	Winter - 5th
4175	Information Systems II	6.0	Winter - 5th
1637	Concurrent Programming	6.0	Winter - 5th
2448	Internet Networks	6.0	Winter - 5th
2369	Multimedia Systems	6.0	Winter - 5th
2962	Logic and Computation	6.0	Winter - 5th
2963	Functional Programming	6.0	Winter - 5th
4013	Cloud Computing	6.0	Summer - 6th
4176	Web Application Development	6.0	Summer - 6th
4013	Cloud Computing	6.0	Summer - 6th

Informatics, Networks and Telecommunications Engineering

Students can select courses from all programs. Please note that changes may occur.

Curricular units in Portuguese Language with tutorial support in English or in English Language

Code	Name	ECTS	Semester
4012	Project	6.0	Summer - 2nd

Curricual units in Portuguese Language

Code	Name	ECTS	Semester
2726	Mathematical Analysis I	6.0	Winter - 1st
3263	Linear Algebra and Analytic Geometry	6.0	Winter - 1st
2195	Logic and Digital Systems	6.0	Winter - 1st
3655	Programming I	6.0	Winter - 1st
2424	Electronics	6.0	Winter - 1st
2234	Internet Networks	6.0	Winter - 3rd
3658	Telecommunication I	6.0	Winter - 3rd
2711	Mathematical Analysis II	6.0	Winter - 3rd
3661	Programming III	6.0	Winter - 3rd
3382	Information Systems I	6.0	Winter - 3rd
1744	Digital Signal Processing	6.0	Winter - 5th
2816	Telecommunications Systems	6.0	Winter - 5th
1811	Internet Programming	6.0	Winter - 5th
3094	Computer Security	6.0	Winter - 5th
2398	Probabilities and Statistics	6.0	Summer - 2nd
2234	Computer Networks	6.0	Summer - 2nd
3375	Signals and Systems	6.0	Summer - 2nd
2226	Computer Architecture	6.0	Summer - 2nd
3656	Programming II	6.0	Summer - 2nd
1641	Advanced Networks	6.0	Summer - 4th
3659	Telecommunications II	6.0	Summer - 4th
4011	Propagation and Radiation Fundamentals	6.0	Summer - 4th
3060	Operating Systems	6.0	Summer - 4th
3114	Modeling and Design Patterns	6.0	Summer - 4th
4012	Project	6.0	Summer - 6th
4013	Cloud Computing	6.0	Summer - 6th
2075	Economics and Project Management	6.0	Summer - 6th

Elective Subjects. ERASMUS students should choose only two and confirm which ones will take place in 2022.

OPTION A

Code	Name	ECTS	Semester
2399	Programming for Mobile Devices	6.0	Winter - 5th
1957	Computer Networks Project	6.0	Winter - 5th
	Network Design	6.0	Winter - 5th
2979	Radio Communications	6.0	Winter - 5th

OPTION B

Code	Name	ECTS	Semester
	Distributed Systems	6.0	Summer - 6th
3746	Web Application Development	6.0	Summer - 6th
2520	Computer Networks Security	6.0	Summer - 6th
	Access Networks	6.0	Summer - 6th
	Terrestrial and Satellite Communications	6.0	Summer - 6th
	Mobile Networks Planning and Optimization	6.0	Summer - 6th
	Networks Automatic Administration	6.0	Summer - 6th

Electronic, Telecommunications and Computer Engineering

Students can select courses from all programs. Please note that changes may occur.

Curricular units in Portuguese Language with tutorial support in English or in English Language

Code	Name	ECTS	Semester
2711	Mathematical Analysis II		Winter - 1st
3662	Introduction to Circuits		Winter - 1st
2195	Logic and Digital Systems		Winter - 1st
3263	Linear Algebra and Analytic Geometry		Winter - 1st
3656	Programming II		Winter - 3rd
2164	Applied Electromagnetism		Winter - 3rd
1709	Electronics I		Winter - 3rd
2845	Analog and Digital Programmable Electronic Systems		Winter - 5th
1744	Digital Signal Processing		Winter - 5th
2711	Mathematical Analysis II		Summer - 2nd
2226	Computers Architecture		Summer - 2nd
2398	Probability and Statistics		Summer - 2nd
2347	Physics for Electronics Engineering		Summer - 2nd
3659	Telecommunications II		Summer - 4th
3067	Electronics II		Summer - 4th
3665	Final Project		Summer - 6th
1850	Terrestrial and Satellite Communications		Summer - 6th
2075	Economy and Project Management		Summer - 6th
3318	Management Systems		Summer - 6th
2903	Instrumentation and Measures		Summer - 6th

Curricular units in Portuguese Language

Code	Name	ECTS	Semester
2338	Control		Winter - 5th
3375	Signals and Systems		

Informatics and Multimedia Engineering

Students can select courses from all programs. Please note that changes may occur.

Curricular units in Portuguese Language with tutorial support in English or in English Language

Code	Name	ECTS	Semester
2075	Economics and Project Management (1)	6.0	Winter - 3rd
2412	Database Systems (1)	6.0	Winter - 5th
3318	Management Systems (2)	6.0	Winter - 5th

(1) English classes 18:30 to 23:00, if all students agree.

(2) Tutorial in English

Curricular units in Portuguese Language

Code	Name	ECTS	Semester
2029	Applied Mathematics for Engineers	6.0	Winter - 1st
3084	Discrete Mathematics and Programming	6.0	Winter - 1st
3201	3D Modeling in Virtual Environments	6.0	Winter - 1st
2819	Sensors and Actuators (3)	6.0	Winter - 1st
2008	Signal Processing and Communication (4)	6.0	Winter - 3rd
2119	Multimedia Authoring (4)	6.0	Winter - 3rd
1843	Modelling and Simulation of Natural Systems	6.0	Winter - 3rd
2871	Image Processing (4)	6.0	Winter - 5th
2448	Internet Networks	6.0	Winter - 5th
3173	Internet Networks	6.0	Winter - 5th
2135	Mathematics for Computer Graphics	6.0	Summer - 2nd
1744	Digital Signal Processing (4)	6.0	Summer - 2nd
3025	Probability Reasoning and Simulation	6.0	Summer - 2nd
2840	Modeling and Programming	6.0	Summer - 2nd
2477	Multimedia Signal Coding	6.0	Summer - 4th
2234	Computer Networks (5)	6.0	Summer - 4th
2036	Animation in Virtual Environments (6)	6.0	Summer - 4th
1629	Project	6.0	Summer - 6th
2984	Multimedia Systems for the Internet (6)	6.0	Summer - 6th
4014	Mobile Applications (4)	6.0	Summer - 6th

(3) Project Based Learning in english. Students must invest 100 EUR to buy their own material.

(4) Course materials in English.

(5) All materials in English (including exams).

(6) Project Based Learning in english.

Mechanical Engineering

Students can select courses from all programs. Please note that changes may occur.

Curricular units in Portuguese Language with tutorial support in English or in English Language

Code	Name	ECTS	Semester
2924	Materials Science	6.0	Winter - 1st
3354	Mathematical Analysis	7.0	Winter - 1st
2380	Applied Linear Algebra	6.0	Winter - 1st
3175	General Physics I	4.0	Winter - 1st
3632	Technical Drawing	3.0	Winter - 1st
2070	Introduction to Programming	4.0	Winter - 1st
2846	Numerical Methods	4.5	Winter - 3rd
3427	Thermodynamics	5.5	Winter - 3rd
3022	Electrical Machines Fundamentals	4.0	Winter - 3rd
3712	Mechanical Drafting	5.0	Winter - 3rd
2184	Mechanical Technology I	5.5	Winter - 3rd
3465	Mechanics of Materials I	5.5	Winter - 3rd
3401	Mechanical Technology II	5.0	Winter - 5th
3212	Air Conditioning Basics	5.5	Winter - 5th
3035	Heat Transfer	5.5	Winter - 5th
2925	Reciprocating Engines	5.0	Winter - 5th
1808	Elements of Machine Design	4.5	Winter - 5th
3376	Seminar I - Introduction to Mechanical Design	0.5	Winter - 5th
2751	Vector Analysis and Differential Equations	7.0	Summer - 2nd
2832	General Physics II	5.5	Summer - 2nd
3331	Applied Mechanics	5.5	Summer - 2nd
3501	Computer Aided Design (CAD)	4.0	Summer - 2nd
3518	Electrical Techonology	4.0	Summer - 2nd
3172	Applied Chemistry	4.0	Summer - 2nd
1765	Engineering Applied Statistics	5.5	Summer - 4th
3153	Applied Thermodynamics	5.5	Summer - 4th
2191	Mechanics of Materials I	5.5	Summer - 4th
2489	Fluid Mechanics	5.5	Summer - 4th
1620	Electronics and Instrumentation	4.0	Summer - 4th

Elective Subjects. ERASMUS students should confirm which ones will take place in 2022.

Code	Name	ECTS	Semester
1793	Computer Aided Design and Manufacturing	4.0	Winter - 5th
2630	Aerodynamics	4.0	Winter - 5th
3994	Quality Inspection and Control	4.0	Winter - 5th
2639	Cold Production	4.0	Winter - 5th
2848	Hydraulic and Pneumatic Systems	4.0	Winter - 5th
1897	Organization, Management and Entrepreneurship	4.0	Winter - 5th
4023	Biomechanics and Ergonomics	4.0	Winter - 5th
2180	Air Conditioning Equipment Technologies	4.0	Summer - 6th
2203	Composite Materials	4.0	Summer - 6th
3346	Thermal Equipments	4.0	Summer - 6th
3462	Occupational Safety and Health	4.0	Summer - 6th
1678	Welding Technology	4.0	Summer - 6th
3996	Physical Assets and Industrial Processes	4.0	Summer - 6th

Mathematics Applied to Tecnology and Enterprise

Students can select courses from all programs. Please note that changes may occur.

Curricular units in Portuguese Language with tutorial support in English or in English Language

Code	Name	ECTS	Semester
3978	Algebra and Geometry	6.0	Winter - 1st
3979	Analysis	6.0	Winter - 1st
3980	Discrete Mathematics	6.0	Winter - 1st
4004	Statistical Models	6.0	Winter - 3rd
4005	Optimization	6.0	Winter - 3rd
4018	Computational Statistical Physics	6.0	Winter - 3rd
4017	Quality Control and Reliability	6.0	Winter - 3rd
4152	Time Series	6.0	Winter - 3rd
4018	Computational Statistical Physics	6.0	Winter - 5th
4017	Quality Control and Reliability	6.0	Winter - 5th
4152	Time Series	6.0	Winter - 5th
4151	Introduction to Bayesian Statistics	6.0	Winter - 5th
4052	Mathematics Themes	3.0	Winter - 5th
3999	Vector Calculus	6.0	Summer - 2nd
4000	Statistics	6.0	Summer - 2nd
4001	Physics	6.0	Summer - 2nd
4002	Introduction to Modeling	6.0	Summer - 2nd
4055	Management and Evaluation of Projects	6.0	Summer - 4th
4019	Operational Research Complements	6.0	Summer - 4th
4053	Game Theory	6.0	Summer - 4th
4019	Operations Research Complements	6.0	Summer - 6th
4053	Game Theory	6.0	Summer - 6th
4052	Mathematics Themes	3.0	Summer - 6th

Applied Mathematics for Industry

Students can select courses from all programs. Please note that changes may occur.

Curricular units in Portuguese Language with tutorial support in English or in English Language

Code	Name	ECTS	Semester
4236	Statistical Techniques for Data Mining Analysis	6.0	Winter - 1st
4237	Forecasting Methods	6.0	Winter - 1st
4238	Graphs and Networks	6.0	Winter - 1st
4239	Applied Partial Differential Equations	6.0	Winter - 1st
4249	Bayesian Statistics	6.0	Winter - 1st
4244	Calculus of Variations	6.0	Winter - 3rd
4246	Mathematical Modelling Seminar	6.0	Winter - 3rd
4248	Stochastic Modelling	6.0	Winter - 3rd
4240	Advanced Statistical Models	6.0	Summer - 2nd
4241	Complementary Topics on Optimization	6.0	Summer - 2nd
4242	Numerical Methods for Partial Differential Equations	6.0	Summer - 2nd
4243	Computational Geometry	6.0	Summer - 2nd
4247	Advanced Modelling and Simulation	6.0	Summer - 2nd
4250	Criptography and Code Theory	6.0	Summer - 2nd

Biomedical Engineering

Students can select courses from all programs. Please note that changes may occur.

Curricular units in Portuguese Language with tutorial support in English or in English Language

Code	Name	ECTS	Semester
3873	Final Project and Thesis I	12	Winter - 3rd
3865	Seminars II	2.5	Summer - 2nd
3873	Final Project and Thesis II	30	Summer - 4th

Curricular units in Portuguese Language

Code	Name	ECTS	Semester
3870	Research Methods and Communication	5.0	Winter - 3rd
3871	Quality management in healthcare	6.5	Winter - 3rd
3872	Entrepreneurship	6.5	Winter - 3rd

Chemical and Biological Engineering

Students can select courses from all programs. Please note that changes may occur.

Curricular units in Portuguese Language with tutorial support in English or in English Language

Code	Name	ECTS	Semester
3158	Applied Mathematics to Engineering	5.0	Winter - 1st
1917	Advanced Methods of Analysis	5.0	Winter - 1st
2015	Industrial Processes	6.0	Winter - 1st
1677	Advanced Separation Processes	5.0	Winter - 1st
2478	Heterogeneous Reactors and Catalysis	5.5	Winter - 1st
3031	Advanced Biotechnology	5.5	Winter - 1st
2204	Advanced Control System	4.5	Winter - 3rd
4119	Functional Genomics and Bioinformatic	4.5	Winter - 3rd
1961	Organization and Management	5.0	Winter - 3rd
2706	Process and Product Design	5.0	Summer - 2nd
2864	Process Optimization	6.0	Summer - 2nd
3332	Process Integration	5.0	Summer - 2nd
1771	System Modelling	5.5	Summer - 2nd
2707	Food Technology	6.0	Summer - 2nd
3422	Environmental Technologies	4.5	Summer - 2nd
3628	Biotechnology in Healthcare	6.0	Summer - 2nd
2809	Master Thesis	46	Summer - 4th

Elective Subjects. ERASMUS students should choose only two and confirm which ones will take place in 2022.

OPTION A

3631	Energetic Sustainability	4.5	Summer - 2nd
3631	Colloid and Surface Chemistry	4.5	Summer - 2nd

OPTION B

3545	Natural and Technological Risk Management	4.5	Winter - 3rd
1690	Strategic Management and Marketing	4.5	Winter - 3rd

Quality and Environmental Engineering

Students can select courses from all programs. Please note that changes may occur.

Curricular units in Portuguese Language with tutorial support in English or in English Language

Code	Name	ECTS	Semester
3834	Complements of Statistics for Engineering	6.0	Winter - 1st
3835	Management Systems	6.0	Winter - 1st
3836	Metrology	4.5	Winter - 1st
3837	Advanced Techniques for Quality	6.0	Winter - 1st
3838	Monitoring & abatement of atmospheric pollutants	4.5	Winter - 1st
	Water Quality	3.0	Winter - 1st
	Environmental Impacts and Sustainability	4.5	Winter - 3rd
3848	Control Methods and Quality Management	4.5	Winter - 3rd
	Waste and Materials Management	3.0	Winter - 3rd
3851	Environmental Modeling	6.0	Winter - 3rd
3852	Master Thesis	12	Winter - 3rd
3849	Research Methods and Communication	4.0	Winter - 3rd
3850	Solid waste management	5.5	Winter - 3rd
3851	Environmental Modeling	6.0	Winter - 3rd
3852	Master Thesis	14.5	Winter - 3rd
3841	Product and Process Design	6.0	Summer - 2nd
3842	Energy Sustainability	4.5	Summer - 2nd
3843	Audits and Certification	4.5	Summer - 2nd
3845	Information Management and Decision Support Systems	4.5	Summer - 2nd
	Water and Waste Water Treatment Plants	6.0	Summer - 2nd
3852	Master Thesis	30	Summer - 4th

Civil Engineering

Students can select courses from all programs. Please note that changes may occur.

Curricular units in Portuguese Language with tutorial support in English or in English Language

Code	Name	ECTS	Semester
4136	Advanced Structural Analysis	5.0	Winter - 1st
3379	Steel and Mixed Constructions	5.0	Winter - 1st
4137	Contentions and Special Foundations	5.0	Winter - 1st
4138	Planeamento do Território e Ambiente	5.0	Winter - 1st
3802	Integrated Management Systems	5.0	Winter - 1st
4139	Construction Technology and Building Systems	5.0	Winter - 1st
3818	Seminar	5.0	Winter - 3rd
3821	Management and Maintenance of Buildings	5.0	Winter - 3rd
4215	Gestão e Avaliação Imobiliária	5.0	Winter - 3rd
4216	Métodos de Gestão Integrada da Construção	5.0	Winter - 3rd
4217	Monitorização e Ensaios	5.0	Winter - 3rd
3820	Construction Rehabilitation	5.0	Winter - 3rd
3793	Prestressed Concrete	5.0	Winter - 3rd
4218	Dinâmica de Estruturas e Engenharia Sísmica	5.0	Winter - 3rd
3824	Bridges and Viaducts	5.0	Winter - 3rd
3813	Road Drainage	5.0	Winter - 3rd
3826	Hidráulica Computacional	5.0	Winter - 3rd
3825	Hydraulic Works	5.0	Winter - 3rd
2800	Marine and Harbour Works	5.0	Winter - 3rd
4219	Sistemas de Tratamento de Águas e Águas Residuais	5.0	Winter - 3rd
4209	Construction, Operation and Maintenance of Road Infrastructures	5.0	Summer - 2nd
4210	Systems and Transportation Engineering	5.0	Summer - 2nd
4211	Hydrology and Water Resources	5.0	Summer - 2nd
4212	Construction Anomaly Inspection and Diagnosis	5.0	Summer - 2nd
4213	Modeling in Civil Engineering with Finite Elements	5.0	Summer - 2nd
4214	Construction Planning and Budgeting	5.0	Summer - 2nd

Electrical Engineering

Students can select courses from all programs. Please note that changes may occur.

Curricular units in Portuguese Language with tutorial support in English or in English Language

Code	Name	ECTS	Semester
2220	Conception of Electrical Installations	6.0	Winter - 1st
3185	Electric Power Complements	6.0	Winter - 1st
3482	Complements of Electrical Machines	6.0	Winter - 1st
2752	Renewable Energies	6.0	Winter - 1st
3400	Industrial Automation	6.0	Winter - 1st
2339	Electric Power Systems Quality	6.0	Winter - 1st
3400	Industrial Automation	6.0	Winter - 1st
3482	Complements of Control Systems	6.0	Winter - 1st
3494	Embedded Electronic Circuits	6.0	Winter - 1st
2339	Electric Power Quality	6.0	Winter - 1st
2235	Business Management	6.0	Winter - 3rd
1604	Nuclear Power	6.0	Winter - 3rd
2236	Traction and Electric Vehicles	6.0	Winter - 3rd
2601	Energy Markets	6.0	Winter - 3rd
4016	Energy Storage Systems	6.0	Winter - 3rd
3976	Acoustics and Noise Control	6.0	Winter - 3rd
3975	Fundamentals of Pulsed Power	6.0	Winter - 3rd
2935	Dissertation	18	Winter - 3rd
3115	Hydrogen Systems	6.0	Winter - 3rd
2035	Mathematic Programming and Industrial Engineering	6.0	Summer - 2nd
2063	Independent Production Installations	6.0	Summer - 2nd
2920	Intelligent Systems	6.0	Summer - 2nd
1989	Electric Machines Project	6.0	Summer - 2nd
3377	Data Acquisition and Signal Processing	6.0	Summer - 2nd
2796	Power Converters and Eletrical Drives	6.0	Summer - 2nd
2055	Command and Control Electronics	6.0	Summer - 2nd
2705	Automation and Supervision Networks	6.0	Summer - 2nd
3068	Robotic Systems	6.0	Summer - 2nd
2035	Mathematical Programming and Industrial Engineering	6.0	Summer - 2nd
3377	Data Acquisition and Signal Processing	6.0	Summer - 2nd
2935	Dissertation	30	Summer - 4th

Computer Science and Computer Engineering

Students can select courses from all programs. Please note that changes may occur.

Curricular units in Portuguese Language with tutorial support in English or in English Language

Code	Name	ECTS	Semester
2798	Distributed Systems Infra-structures		Summer - 2nd
4142	Dissertation or Project		Summer - 4th

Elective Subjects. ERASMUS students should confirm which ones will take place in 2022.

1841	Complements of Information Systems		Winter - 1st
3500	Data Coding and Compression		Winter - 1st
4112	Cybersecurity		Winter - 1st
2490	Content Delivery Networks		Winter - 1st
2773	Machine Learning and Data Mining		Winter - 1st
4116	Large Scale Data Computation		Winter - 3rd
4114	Design and 3D Printing		Winter - 3rd
1780	Integration of Networks and Services		Winter - 3rd
4104	Artificial Intelligence and Cognitive Systems		Winter - 3rd
2075	Economy and Project Management		Summer - 2nd
2340	Information Systems Management		Summer - 2nd
4111	Internet of Things		Summer - 2nd
4015	Big Data Mining		Summer - 2nd
3745	Image Processing and Biometrics		Summer - 2nd
2519	Mobile Communication Networks		Summer - 2nd
1842	Knowledge Representation and Processing		Summer - 2nd
2520	Computer Networks Security		Summer - 2nd
2133	Information Systems for Decision Support		Summer - 2nd

Electronics and Telecommunications Engineering

Students can select courses from all programs. Please note that changes may occur.

Curricular units in Portuguese Language with tutorial support in English or in English Language

Code	Name	ECTS	Semester
1875	Antennas	6.0	Winter - 1st
2410	Mobile Communications	6.0	Winter - 1st
4107	Integrated Circuits	6.0	Winter - 1st
2821	Optoelectronics: Optical Communications	6.0	Winter - 1st
1796	Digital Signal Processing	6.0	Winter - 1st
2699	Digital Systems Design	6.0	Winter - 1st
2631	Multimedia Networks and Services	6.0	Winter - 1st
2322	Optical Communication Systems	6.0	Winter - 1st
2370	Electronic Systems for Telecommunications	6.0	Winter - 1st
2816	Telecommunications Systems	6.0	Winter - 1st
4112	Cybersecurity	6.0	Winter - 3rd
4114	3D Design and Printing	6.0	Winter - 3rd
2159	Dissertation in Telecommunications	6.0	Winter - 3rd
1926	Dissertation in Electronics	6.0	Winter - 3rd
1780	Networks and Systems Integration	6.0	Winter - 3rd
3608	Opto-Bio-Photo Electronic	6.0	Winter - 3rd
1957	Computer Network Project	6.0	Winter - 3rd
2490	Content Delivery Networks	6.0	Winter - 3rd
4109	Electronic Systems in Integrated Circuits	6.0	Winter - 3rd
3495	Broadband Transmission Systems	6.0	Winter - 3rd
3598	Optical and Photonic Technology	6.0	Summer - 2nd
1962	Advanced Computing Architectures	6.0	Summer - 2nd
3042	Microwave Circuits	6.0	Summer - 2nd
1850	Terrestrial and Satellite Communications	6.0	Summer - 2nd
2075	Economy and Project Management	6.0	Summer - 2nd
3584	Biomedical Instrumentation: Sensors and Circuits	6.0	Summer - 2nd
4111	Internet of Things	6.0	Summer - 2nd
3611	Optoelectronics: Devices and Systems	6.0	Summer - 2nd
3310	Mobile Networks Planning and Optimization*	6.0	Summer - 2nd
4108	Integrated Circuit Project	6.0	Summer - 2nd
2519	Mobile Communication Networks	6.0	Summer - 2nd
4110	Core Networks	6.0	Summer - 2nd
2520	Computer Networks Security	6.0	Summer - 2nd
1641	Advanced Networks	6.0	Summer - 2nd
2783	Digital Teledifusion	6.0	Summer - 2nd

Informatics and Multimedia Engineering

Students can select courses from all programs. Please note that changes may occur.

Curricular units in Portuguese Language with tutorial support in English or in English Language

Code	Name	ECTS	Semester
2773	Machine Learning and Data Mining	6.0	Winter - 1st
4140	Interactive and Immersive Audio	6.0	Winter - 1st
4112	Cybersecurity	6.0	Winter - 1st
2490	Content Delivery Networks	6.0	Winter - 1st
1814	Geographical and Multimedia Information Systems	6.0	Winter - 3rd
4145	Project or Dissertation	12	Winter - 3rd
1780	Network Design	6.0	Winter - 3rd
4116	Big Data Computing	6.0	Winter - 3rd
2075	Economy and Project Management	6.0	Winter - 3rd
4114	Design and 3D Printing	6.0	Winter - 3rd
2158	Interactive Multimedia Applications	6.0	Summer - 2nd
4228	Computer Vision and Mixed Reality	6.0	Summer - 2nd
4227	Interactive and Intelligent Virtual Environments	6.0	Summer - 2nd
4226	Advanced Machine Learning	6.0	Summer - 2nd
4111	Internet of Things	6.0	Summer - 2nd
4015	Big Data Mining	6.0	Summer - 2nd
2520	Computer Networks Security	6.0	Summer - 2nd
3267	Speech Processing	6.0	Summer - 2nd
4145	Project or Dissertation	30	Summer - 4th

Curricular units in Portuguese Language

Code	Name	ECTS	Semester
1670	Mobile Robotics	6.0	Summer - 2nd

Mechanical Engineering

Students can select courses from all programs. Please note that changes may occur.

Curricular units in Portuguese Language with tutorial support in English or in English Language

Code	Name	ECTS	Semester
3338	Optimization Applied to Engineering	6.5	Winter - 1st
2592	Sensors and Actuators	5.5	Winter- 1st
2698	Turbomachines	6.5	Winter - 1st
2246	Refrigeration	6.5	Winter - 1st
3713	Computational Mechanics	6.5	Winter - 1st
2898	Welding and Joining Processes	6.5	Winter - 1st
2731	Total Productive Maintenance and Lean Management	6.0	Winter - 3rd
3069	Tribology	6.0	Winter - 3rd
3470	Special Technical Installations	5.0	Winter - 3rd
3393	Automatic Control Systems	6.5	Summer - 2nd
3708	Mechanical Vibrations	6.5	Summer - 2nd
3197	Production and Management of Energy	7.0	Summer - 2nd
3076	Fracture Mechanics	7.0	Summer - 2nd

Elective Subjects. ERASMUS students should confirm which ones will take place in 2022.

Code	Name	ECTS	Semester
3993	Corrosion and Protection	5.0	Winter - 1st
2506	Thermodynamics Computational Calculus	5.0	Winter - 1st
3599	Eletrical Power Applications	5.0	Winter - 1st
3992	Computer Aided Engineering	5.0	Winter - 1st
3029	Project Evaluation Management	5.0	Winter - 3rd
3874	Innovation and New Product Development	5.0	Winter - 3rd
2682	Industrial Robotics	5.0	Winter - 3rd
3707	Maintenance for Control Condition	5.0	Winter - 3rd
1697	Computational Fluid Dynamics	5.0	Winter - 3rd
3141	Energy Management in Buildings	5.0	Winter - 3rd
2613	Renewable Energy Applications	5.0	Summer - 2nd
2273	Programmable Logic Controllers	5.0	Summer - 2nd
2715	Ventilation	5.0	Summer - 2nd
2459	Cooling Plants	5.0	Summer - 2nd
2237	Hydraulic Machines	5.0	Summer - 2nd
1890	Automotive Technology and Management	5.0	Summer - 2nd
3984	Reverse Engineering	5.0	Summer - 2nd
3539	Reliability	5.0	Summer - 2nd
3012	Aircraft Maintenance	5.0	Summer - 2nd

Industrial Engineering and Management

Students can select courses from all programs. Please note that changes may occur.

Curricular units in Portuguese Language with tutorial support in English or in English Language

Code	Name	ECTS	Semester
4030	Industrial Optimization Methods	6.0	Winter - 1st
4031	Logistics Management	6.5	Winter - 1st
2731	Total Productive Maintenance and Lean Management	6.5	Winter - 1st
4032	Computer System Architectures	6.0	Winter - 1st
3029	Project Evaluation and Management	5.0	Winter - 3rd
4039	Marketing and Strategy	6.5	Winter - 3rd
4035	Decision Models	6.5	Summer - 2nd
4036	Techniques for Quality	7.0	Summer - 2nd
4038	Operation and Processes Simulation	5.0	Summer - 2nd
4042	Master Thesis	13.5	Summer - 2nd
4042	Master Thesis	30	Summer - 4th

Elective Subjects. ERASMUS students should confirm which ones will take place in 2022.

Code	Name	ECTS	Semester
3610	Energy Audits	5.0	Winter - 1st
3592	Integrated Quality and Standardisation	5.0	Winter - 1st
4034	Risk Management	5.0	Winter - 1st

Curricular units in Portuguese Language

Code	Name	ECTS	Semester
4037	Cost Analysis	6.5	Summer - 2nd