First semester

Mandatory

Code	Course	Credits	Group
1061	DIFFERENTIAL AND INTEGRAL CALCULUS IN ONE VARIABLE	13	Basic Courses and Basic - Technological
1030	GEOMETRY AND LINEAR ALGEBRA 1	9	Basic Courses and Basic - Technological
1151	PHYSICS 1	10	Basic Courses and Basic - Technological
1266	WORKSHOP: GRAPHIC REPRESENTATION AND COMMUNICATION - MODULE A	4	Integrating Activities
1269	WORKSHOP: GRAPHIC REPRESENTATION AND COMMUNICATION - MODULE B	4	Integrating Activities

Electives

Code	Course	Credits	Group
MI	INITIAL MATHEMATICS (*)	4	Basic Courses and Basic - Technological

* The curricular unit "Initial mathematics" can be a pre-requisite for the curricular unit "Differential and integral calculus in one variable", for more information con

Second semester

Mandatory

Code	Course	Credits	Group
1062	DIFFERENTIAL AND INTEGRAL CALCULUS IN SEVERAL VARIABLES	13	Basic Courses and Basic - Technological
1031	GEOMETRY AND LINEAR ALGEBRA 2	9	Basic Courses and Basic - Technological
1152	PHYSICS 2	10	Basic Courses and Basic - Technological
2416	INTRODUCTION TO PRODUCTION ENGINEERING (*)	3	Specific for Production Engineering
1322	PROGRAMMING 1	10	Basic Courses and Basic - Technological

Electives

Code	Course	Credits	Group
1268	INTORODUCTION TO R PROGRAMMING FOR ENGINEERING	3	Engineering and Industrial Technologies

* Does not apply to 2020 generation and earlier.

Third semester

Mandatory

Code	Course	Credits	Group
1025	PROBABILITY AND STATISTICS	10	Basic Courses and Basic - Technological
1122	NEWTONIAN MECHANICS	10	Basic Courses and Basic - Technological
1154	EXPERIMENTAL PHYSICS 1	5	Basic Courses and Basic - Technological
1620	GENERAL CHEMISTRY FOR ENGINEERS	8	Basic Courses and Basic - Technological
1223	SCIENCE, TECHNOLOGY AND SOCIETY	8	Specific for Production Engineering

Electives

Code	Course	Credits	Group
1321	PROGRAMMING 2	12	Basic Courses and Basic - Technological
1063	VECTORIAL CALCULUS (*)	10	Basic Courses and Basic - Technological

* The curricular unit "Vectorial calculus" can be a pre-requisite of a MANDATORY curricular unit, for more information consult Bedelias.

Fourth semester

Mandatory

Code	Course	Credits	Group
1153	PHYSICS 3	10	Basic Courses and Basic - Technological
1123	THERMAL PHYSICS	10	Basic Courses and Basic - Technological
1510	QUALITY CONTROL	8	Specific for Production Engineering
1922	COSTS FOR ENGINEERING	8	Specific for Production Engineering
2033	WORKSHOP 2: QUANTITATIVE MODELING FOR PRODUCTION PROBLEMS	5	Integrating Activities
1033	NUMERICAL METHODS	8	Basic Courses and Basic - Technological

Fifth semester

Mandatory

Code	Course	Credits	Group
1610	INTRODUCTION TO OPERATIONS RESEARCH	10	Specific for Production Engineering
1954	QUALITY MANAGEMENT	7	Specific for Production Engineering
1764	MECHANICAL BEHAVIOUR OF MATERIALS 1	13	Engineering and Industrial Technologies
1723	INTRODUCTION TO MATERIAL'S SCIENCE	12	Basic Courses and Basic - Technological

Electives

Code	Course	Credits	Group
1788	FUNDAMENTALS OF INDUSTRIAL ROBOTICS	8	Specific for Production Engineering
1871	FUNDAMENTALS OF OPTIMIZATION (*)	6	Basic Courses and Basic - Technological
1944	GENERAL ADMINISTRATION FOR ENGINEERS	5	Specific for Production Engineering

Sixth semester

Mandatory

Code	Course	Credits	Group
2038	TIMES AND METHODS	8	Specific for Production Engineering
2401	LEGISLATION AND INDUSTRIAL RELATIONS	6	Specific for Production Engineering
1224	ECONOMY	7	Specific for Production Engineering
Q59B	INTRODUCTION TO PROCESS ENGINEERING	5	Engineering and Industrial Technologies
2037	PRODUCTION PROBLEMS OPTIMIZATION	5	Integrating Activities
1064	INTRODUCTION TO DIFFERENTIAL EQUATIONS	10	Basic Courses and Basic - Technological

Electives

Code	Course	Credits	Group
1129	OPTICS (**)	10	Basic Courses and Basic - Technological
1023	DISCRETE MATHEMATICS 1	9	Basic Courses and Basic - Technological
1945	MANAGEMENT PRACTICE FOR ENGINEERS	5	Specific for Production Engineering

* The curricular unit "Fundamentals of optimization" might not be taught every year. Please contact the professors.
** The curricular unit "Optics" is taught on a bi-annual basis. Please contact the professors.

Seventh semester

Mandatory

Code	Course	Credits	Group
1915	OPERATIONS MANAGEMENT	8	Specific for Production Engineering
2108	ELECTROTECHNICAL I	9	Engineering and Industrial Technologies
2244	LOGISTICS MANAGEMENT ELEMENTS	8	Specific for Production Engineering
1539	HUMAN RESOURCES MANAGEMENT IN THE PRODUCTION OF GOODS AND SERVICES	8	Specific for Production Engineering
Q22	TRANSPORT PHENOMENA IN PROCESS ENGINEERING	14	Engineering and Industrial Technologies

Electives

Code	Course	Credits	Group
1805	ELEMENTS OF FLUID'S MECHANICS	14	Basic Courses and Basic - Technological

Eighth semester

Mandatory

Code	Course	Credits	Group
Q66	FLUID-DYNAMICS	14	Engineering and Industrial Technologies
2256	ELEMENTS OF ENVIRONMENTAL ENGINEERING	7	Engineering and Industrial Technologies
2035	WORKSHOP 4: IMPROVING COMPETITIVENESS	5	Integrating Activities
2039	ECONOMIC AND FINANCIAL EVALUATION OF INVESTMENT PROJECTS	4	Specific for Production Engineering

Electives

Code	Course	Credits	Group
1877	REFORMULATIONS AND ALGORITHMS FOR PRODUCTION PLANNING	10	Specific for Production Engineering
Q74	DISCRETE EVENT SIMULATION	10	Engineering and Industrial Technologies

Ninth semester

Mandatory

Code	Course	Credits	Group
Q16	INTRODUCTION TO THE PREVENTION OF OCCUPATIONAL HAZARDS	6	Specific for Production Engineering
2098	INTERNSHIP	8	Integrating Activities
2099	PROJECT (*)	10	Integrating Activities
3334	FUNDAMENTALS OF SOFTWARE ENGINEERING	8	Engineering and Industrial Technologies

Electives

Code	Course	Credits	Group
Q94	DYNAMICS AND PROCESS CONTROL	10	Engineering and Industrial Technologies
1631	INTEGER PROGRAMMING BASICS (**)	8	Specific for Production Engineering
1632	OPTIMIZATION UNDER UNCERTAINTY (**)	8	Specific for Production Engineering
2706	INDUSTRIAL INSTRUMENTATION	8	Engineering and Industrial Technologies
1920	MAINTENANCE MANAGEMENT	8	Specific for Production Engineering
2391	STRATEGIC PLANNING AND COMPETITIVE STRATEGY	6	Specific for Production Engineering

* The curricular unit "Project" is annual, corresponding 10 credits to the ninth semester and 20 credits to the tenth semester
** The curricular units "Integer programming basics" and "Optimization under uncertainty" are not taught simultaneously (check)

Tenth semester

Mandatory

Code	Course	Credits	Group
2099	PROJECT (*)	20	Integrating Activities

Electives

Code	Course	Credits	Group
1777	SOFTWARE ENGINEERING PROFESSION	6	Engineering and Industrial Technologies
1779	OPERATIONS RESEARCH AND RISK MANAGEMENT	6	Specific for Production Engineering
1633	THEORY, ALGORITHMS AND APPLICATIONS FOR LOGISTICS MANAGEMENT	8	Specific for Production Engineering

* The curricular unit "Project" is annual, corresponding 10 credits to the ninth semester and 20 credits to the tenth semester

Other courses

Electives

Code	Course	Credits	Group
1026	DISCRETE MATHEMATICS 2	9	Basic Courses and Basic - Technological
1036	COMPLEX VARIABLE FUNCTIONS	5	Basic Courses and Basic - Technological
1155	EXPERIMENTAL PHYSICS 2	5	Basic Courses and Basic - Technological
1156	EXPERIMENTAL PHYSICS 3	6	Basic Courses and Basic - Technological
2032	EXTENSION MODULE - MECHANICAL ENGINEERING	3	Specific for Production Engineering
1216	WORKSHOP "ENCARARÉ": CREATE	8	Specific for Production Engineering
2417	EVIDENCE BASED, SOFTWARE ENGINEERING	8	Engineering and Industrial Technologies
2398	DECOMPOSITION TECHNIQUES IN MATHEMATICAL PROGRAMMING	4	Specific for Production Engineering
1951	WORKSHOP: TOOLS FOR INNOVATION	4	Specific for Production Engineering
5005	Tutoría entre pares académicas PROGRESA-FING	8	Integrating Activities
2040	INTRODUCTION TO AUDIOVISUAL AND MULTIMEDIA PRODUCTION	6	Integrating Activities
3207	TOOLS FOR THE DESIGN AND ANALYSIS OF URBAN PASSENGER TRANSPORT NETWORKS	8	Specific for Production Engineering
1892	DATA BASES FOR ENGENIEERING	10	Engineering and Industrial Technologies
To be published	SOLIDARITY APPLICATIONS BASED ON CONTENT MANAGEMENT SYSTEMS	4	Engineering and Industrial Technologies
Q74	HEAT AND MASS TRANSFER 1	14	Engineering and Industrial Technologies
2315	INTRODUCTION TO SANITARY ENGINEERING	6	Engineering and Industrial Technologies
816EU	SCIENTIFIC ENGLISH	4	Integrating Activities
RETEM	KNOWLEDGE OF THE ENVIRONMENT AND SUSTAINABILITY INTRODUCTION	4	Engineering and Industrial Technologies
2001	WORKSHOP (**)	6	Integrating Activities
Q28	PULP AND PAPER PRODUCTION FUNDAMENTALS	8	Engineering and Industrial Technologies
1765	MECHANICAL BEHAVIOUR OF MATERIALS 2	13	Engineering and Industrial Technologies
1872	APPLICATIONS OF LINEAR ALGEBRA	9	Basic Courses and Basic - Technological
1868	STATISTICAL MODELS FOR CLASSIFICATION AND REGRESSION	6	Basic Courses and Basic - Technological
1023	LINEAR ALGEBRA APLICATIONS	9	Basic Courses and Basic - Technological
AT001	SENSITIZATION AND EXCHANGE FOR EQUITY	2	Integrating Activities

* Pre-requisites of the curriculum unit "Introduction to data bases" may be subject to change
** The curricular unit "Workshop (UTU)" is taught at the Instituto Tecnológico Superior (ITS) "Arias - Balparda". For more information go to EVA.