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Universidad del País Vasco
Euskal Herriko Unibertsitatea

FACULTY OF ENGINEERING BILBAO
UNIVERSITY OF THE BASQUE COUNTRY

FACULTY OF ENGINEERING IN BILBAO Undergraduate programmes

Environmental Engineering
Industrial Organisation Engineering
Industrial Technology Engineering
Telecommunication Technology Engineering
Electrical Engineering
Industrial Electronics and Automation Engineering
Mechanical Engineering
Computer Engineering in Management and Information Systems
Civil Engineering
Mining and Energy Engineering
Marine Studies
Nautical Studies and Maritime Transport

www.ehu.eus

BASQUE YOURSELF

Would you like to live an international experience during your university studies? If so, the University of the Basque Country is an excellent choice.

Our university is the Basque Country´s largest higher education institution. Structured in three campuses -covering the three Basque territories-, our community of students, lecturers and researchers aggregates 60,000 fellows.

Ranked among the top 500 world universities, the University of the Basque Country is a multilingual institution where Basque and Spanish are equally spoken and English is rapidly increasing. After exhaustive assessment of our activity, we were accredited Campus of International Excellence by the Spanish Ministry of Education. Boosted by this recognition, we aspire to even higher goals: becoming one of Europe´s best.

If you are interested in building on your academic and professional qualifications, the University of the Basque Country can offer you a positive learning environment, optimal technical and human resources and above all the prestige of a university committed to excellence and innovation in teaching. Come and basque yourself!

OUR CAMPUSES

The University of the Basque Country is structured in 3 campuses: the Campus of Araba, the Campus of Biscay and that of Gipuzkoa.

Campus of Biscay

A total 9 Faculties and Schools make up our largest campus. Along with 2 faculties located in downtown Bilbao, we have 7 faculties in our University complex of Leioa (15 km from Bilbao), and a building belonging to the Faculty of Engineering in Portugalete.

Capital of Biscay

Bilbao

Population

343,173 inhabitants

www.bilbao.net

INTRODUCTION TO THE FACULTY

The modern-day Bilbao Faculty of Engineering was founded at the start of 2016 as the merger of the four old UPV/EHU engineering schools: the Bilbao Higher Technical School of Engineering founded in 1897; the Bilbao University Technical School of Industrial Engineering created in 1942; the University Technical School of Mining and Public works founded in 1913; and the Higher Technical School of Navigation and Naval Machinery founded in Portugalete in 1739.
The new faculty, which hosts over 4,800 students, embodies the accumulated experience, resources and know-how of many years in the different major fields of the technical training provided by the above mentioned former UPV/EHU engineering schools at the Campus of Biscay. The commitment of over 700 lecturers and 150 administrative and service staff members is that of providing society with well-trained professionals broadly skilled in the fields of technology.
Our objective is to continue maintaining our close contact with the technological and business world, adapting education to market needs. Another major objective is to expand our existing network of already considerable contacts and agreements with different universities around the world to be able to offer our students possibilities of rounding off their training.

FACILITIES

- 97 lecture rooms with audio-visual equipment
- 30 seminar rooms with audio-visual equipment
- 24 computerised classrooms for teaching purposes (over 639 terminals)
- 105 laboratories for teaching activities
- 80 research laboratories for projects oriented to undergraduate projects or graduate theses or to open departmental research lines
- Navigation simulator
- Machine simulator
- Planetarium
- Training vessel: "Saltillo"
- Individual study rooms
- Group working rooms
- 8 computerised classrooms (over 260 terminals)
- 2 Auditoriums
- 3 Lecture Halls
- 3 Meeting Rooms, 1 Conference Room and 1 elevated bridge area
- Video-conference room
- Libraries in Building II and in the EIB Building, Portugalete
- Cafeterias in every building
- Furnished dining halls for students

CONTACT

Faculty of Engineering, Bilbao
Plaza Ingeniero Torres Quevedo, 1 - 48013 Bilbao

Phone:**+34 946 01 40 24**
www.ehu.eus/ingeniaritza-bilbo

MULTILINGUALISM

The multilingual programme enables you to take subjects in English, French or German. Moreover, you may do your final project or master's thesis in your language, provided there are faculty members accredited in that language.

MOBILITY PROGRAMMES

The International Relations Unit of the Faculty of Engineering aims to promote and administer mobility for its students, faculty members and administration and service personnel through the different university exchange programmes this institution offers, encouraging international mobility as a differentiating element in its curriculum. It also manages requests from groups of foreign universities and institutions desiring to come to the faculty under those same programmes.

Mobility programmes facilitate student exchanges between partner universities, thus enabling students to take part of their studies outside their university for a specified term, wherein the credits earned during exchange are acknowledged on their academic records. Studies offered include undergraduate as well as graduate credits.

Teaching, administrative and service staff can also arrange for a stay at our centre through Erasmus+ or other specific programmes.

The Faculty of Engineering in Bilbao participates in the following programmes: Erasmus+, Latin America, Sicue, Other Countries for the USA and Asia, and have the option to obtain dual degrees from universities in the UK, Sweden, the USA and France.

For more information, visit our Guest Student website:

http://www.ehu.eus/en/web/ingeniaritza-bilbo/alumnado-visitante

On this website, under the "Study at the Faculty of Engineering in Bilbao" section, you will find files with practical information about the faculty, the courses it offers, how to check schedules, etc., as well as particulars about lodging and Spanish courses for foreigners.

RELATIONS WITH COMPANIES

We have several ongoing programmes with companies and institutions:

Educational cooperation internships

You will be able to undergo voluntary internships in companies, agencies or institutions during the last year of your degree. This can serve as an appropriate first contact with the corporate world. We have over 900 agreements with 450 collaborating companies.

Company seminars

Business specialists will impart courses to supplement your training in both the technical and organisational fields of human relations. We have over 14 participating companies.

Job days and company introductions

Around 45 companies present the activities they engage in, their job opportunities and the candidate profiles that best adjust to their corporate policies in different locations and geographic areas. You will have the chance to get in touch with corporate representatives and submit your CV, thus establishing a first job-seeking contact.

Company-sponsored classrooms

Created and financed by companies to further their activities in R+D+i, these serve as effective collaboration instruments between the faculty and companies with regard to research-related, technological development and innovation activities as well as all aspects concerning the training of future engineers or the company staff in terms of recycling and continuous education. We have 12 such classrooms.

Corporate awards

The collaborating companies Accenture and Itelazpi, together with the Faculty of Engineering in Bilbao Foundation, sponsor prizes for the best Final Projects and Master theses. They aim to acknowledge good performance by the student body as well as to encourage it to undertake projects in their fields of interest.

UPV/EHU ACCESS FOR STUDENTS WITH UNIVERSITY STUDIES INITIATED ABROAD

Provided they are acknowledged to have finished a minimum of 30 first-year credits, this student group may request admission by presenting their personal academic certificate on the dates indicated for each schoolyear (end of June) at the secretariat of the faculty where they wish to enrol. The dean or director, acting for the chancellor, will resolve the case.

150
visiting students per year

124
ECTS credits
taught in English

6 to **24**
ECTS credits
in English in Final Year Project

150
ECTS credits
available as English Friendly Course

BUDDY PROGRAMME

A student from the faculty (buddy) will help you to prepare your stay before your arrival and throughout your first few days in the Basque Country. Your buddy will resolve your doubts about the city, transport, the faculty, the operation of university services... He or she will be your guide, facilitating your adaptation and integration

LANGUAGE COURSES

The Vice-Rectorate for Coordination and International Relations offers language courses for visiting students, both in Spanish and Basque languages. These courses are free of charge for exchange students and, depending on your language level, you will be assigned to the group that suits you best: beginner, intermediate or advanced. In addition to courses every semester (60 hours), there is also an intensive Spanish course in summer before the academic year starts (45 hours).

BSc IN ENVIRONMENTAL ENGINEERING

Field of Knowledge: Engineering and Architecture

Society is increasingly more aware about the need to protect our environment. The environmental challenges that we confront are diverse: climate change, pollution, the destruction of natural habitats, the scarcity of natural resources, waste... Unrestricted development and the uncontrolled exploitation of resources are behind all these problems, and in order to check them, we need professionals who will know how to face these challenges.

The Degree in Environmental Engineering with provide you with the tools necessary to assess the ecological impact of our actions in the industrial, economic and social spheres and enable you to identify, analyse, diagnose and describe environmental problems as well as correct or prevent them.

This degree will train you to be capable of proposing measures to prevent pollution through the development of clean technologies. It will also enable you to design, plan and execute installations to minimise the effect of contaminating emissions.

Moreover, you will have the opportunity to specialise in one of these three majors: Atmosphere and Acoustics, Waste and Soils, and Water.

If you are committed to and interested in improving and protecting our environment and

you have an aptitude for subjects such as mathematics, chemistry and draughtsmanship, the degree in Environmental Engineering is the perfect choice for you.

This degree will prepare you to...

Identify, measure and diagnose an environmental problem and correct or prevent the problem as well as its impact; draft and develop projects and reports in the field of environmental engineering; analyse the social and environmental impact of technical solutions; resolve problems with initiative, creativity and critical reasoning; and work in multilingual, multidisciplinary surroundings.

CURRICULUM

FIRST YEAR 60 credits (48 in basic subjects + 12 in mandatory subjects)

Fall semester

- ***Linear Algebra (Full year)***
- ***Calculus (Full year)***
- ***Physics (Full year)***
- ***Gráficos de Ingeniería****
- ***Chemistry***

Spring semester

- ***Linear Algebra (Full year)***
- ***Calculus (Full year)***
- ***Physics (Full year)***
- ***Advanced Physics***
- ***Ampliación de Gráficos de Ingeniería****
- Informática

SECOND YEAR 60 credits (12 in basic subjects + 48 in mandatory subjects)

Fall semester

- Ampliación de Ecuaciones Diferenciales y Cálculo Numérico
- Biología
- ***Electrotecnia****
- Estadística
- ***Fundamentos de Ciencia de Materiales****

Spring semester

- Ecología
- Economía y Organización de Empresas
- Geología y Edafología
- Mecánica Fluidos
- Termodinámica

THIRD YEAR 60 credits (60 in mandatory subjects)

Fall semester

- Automática y Control de Procesos
- Biotecnología
- Operaciones Básicas en Ingeniería Ambiental
- Resistencia de Materiales
- Termotecnia

Spring semester

- Electrónica General
- Geotecnia, Estructuras y Obras
- Instalaciones y Complejos Industriales y Urbanos
- Máquinas Térmicas e Hidráulicas
- Reactores Químicos y Biológicos

FOURTH YEAR 60 credits (24 in mandatory subjects + 30 in electives + 6 in Final Project)

Fall semester

- ***Proyectos de Ingeniería (Full year)****
- Análisis Químico y Control de Calidad de Datos
- Ciencia y Tecnología Ambiental

Electives

- Hidrología Aplicada (M1)
- Muestreo y Análisis de Aguas (M1)
- Química del Agua (M1)
- Acústica y Ruido (M2)
- Meteorología y Climatología Aplicadas (M2)
- Muestreo y Análisis de Gases (M2)
- Caracterización Química y Biológica de Suelos (M3)
- Contaminación Radiológica (M3)
- Muestreo y Análisis y de Residuos (M3)
- Norma y Uso de la Lengua Vasca

Spring semester

- ***Proyectos de Ingeniería (Full year)****
- Derecho Ambiental

Electives

- Análisis Ambiental Integrado en la Industria (M1)
- Análisis de Riesgos (M1)
- Tecnología de Tratamiento de Aguas (M1)
- Química de la Contaminación Atmosférica y Dispersión de Contaminantes (M2)
- Tecnología de Tratamiento de Gases (M2)
- Tecnología de Tratamiento de Ruido y Vibraciones (M2)
- Gestión Ambiental en el Sector Público (M3)
- Gestión Ambiental en la Industria (M3)
- Tecnología de Tratamiento Residuos y Suelos Contaminados (M3)
- Comunicación en Euskera: Ingeniería

FINAL PROJECT

* **English Friendly Courses (EFC)** are those degree subjects which, while being taught in Spanish, offer the syllabus, along with tutoring, diverse tasks, examinations, etc., in English.

MAJOR FIELDS OF KNOWLEDGE

- Aguas (M1)
- Atmósfera y Ruido (M2)
- Residuos y Suelos (M3)

BSc in INDUSTRIAL ORGANISATION ENGINEERING

Field of Knowledge: Engineering and Architecture

Improving productivity and efficiency while optimising resources is a key to the success of any company, and understanding technological and industrial reality is fundamental to achieving this goal.

Corporate Industrial Engineering perfectly combines a more technical background in industry with the management and organisation of business structures. It will therefore enable you to optimally exploit the resources of any organisation and train you to integrate into any company department.

The degree in Corporate Industrial Engineering will provide you with basic knowledge of industrial engineering oriented towards the business world in areas directly related to production and operations: quality, purchasing, sales, logistics, production, processes, finance, maintenance, innovation management, project management, human resources, etc.

If you are organised, capable of managing working teams and skilled at communication, mathematics, physics, chemistry and draughtsmanship, the degree in Corporate Industrial Engineering is the qualification you are looking for.

This degree will prepare you to...

Draw up, sign and develop projects and reports in the field of Corporate Industrial Engineering; organise and plan for businesses and organisations; conduct measurements, calculations, assessments, appraisals, expertise, studies, and prepare reports and work plans; resolve problems with initiative, creativity and critical reasoning; and work in multilingual, multidisciplinary surroundings.

CURRICULUM

FIRST YEAR 60 credits (48 in basic subjects + 12 in mandatory subjects)

Fall semester

- ***Linear Algebra (Full year)***
- ***Calculus (Full year)***
- ***Physics (Full year)***
- Gráficos de Ingeniería
- ***Chemistry***

Spring semester

- ***Linear Algebra (Full year)***
- ***Calculus (Full year)***
- ***Physics (Full year)***
- ***Advanced Physics***
- Ampliación de Gráficos de Ingeniería
- Informática

SECOND YEAR 60 credits (60 in mandatory subjects)

Fall semester

- Ampliación de Ecuaciones Diferenciales y de Métodos Numéricos
- Automatización de Procesos
- Electrotecnia
- Estadística
- ***Fundamentos de Ciencia de Materiales****

Spring semester

- Ampliación de Estadística
- Economía
- Mecánica
- Mecánica Fluidos
- Termodinámica

THIRD YEAR 60 credits (60 in mandatory subjects)

Fall semester

- Complejos Industriales
- Dirección Comercial
- Diseño, Planificación y Gestión de Sistemas Productivos y Logísticos
- Métodos Cuantitativos en Organización I
- Termotecnia

Spring semester

- Competitividad e Innovación Empresarial
- Métodos Cuantitativos en Organización II
- Organización del Trabajo y Factor Humano
- Tecnología Química
- ***Tecnologías de Fabricación****

FOURTH YEAR 60 credits (36 in mandatory subjects + 18 in electives + 6 in Final Project)

Fall semester

- ***Proyectos de Ingeniería (Full year)****
- Ciencia y Tecnología Ambiental
- Dirección Financiera I
- Política Industrial y Tecnología

Electives

- Gestión de Calidad
- Gestión de Personal
- Gestión, Seguridad e Higiene y Ergonomía
- Norma y Uso de la Lengua Vasca

Spring semester

- ***Proyectos de Ingeniería (Full year)****
- Dirección Financiera II
- Estrategia y Política de Empresas

Electives

- Comunicación en Euskera: Ingeniería
- Dirección de Sistemas de Información
- Mercados de la Electricidad

FINAL PROJECT

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BSc in INDUSTRIAL TECHNOLOGY ENGINEERING

Field of Knowledge: Engineering and Architecture

Industry is one of the main driving forces in our economy, thus requiring individuals qualified in systems and processes that can contribute to the development of industrial sectors.

Industrial Engineering is the broadest of all engineering fields, adaptable and multi-purpose,

entailing a general technical background and solid scientific and technological foundations in matters such as mechanics, materials, chemistry, electricity, automation, design and thermodynamics, industrial organisation, etc.

The engineering degree in Industrial Technology will prepare you to form an integrated vision of industrial production processes in order to implement and improve them, affecting the principal assets of the company: employees, materials, production equipment, power, financial and economic aspects... In a word, to increase organisational productivity and competitiveness.

To obtain the full qualification of Industrial Engineer, it is necessary to complete the Master's Degree in Industrial Engineering, which is directly accessed from this degree.

If you are interested in industrial production systems and processes and you are an organised individual with skills in mathematics, physics, chemistry and draughtsmanship, the Engineering Degree in Industrial Technology is the qualification for you.

This degree will train you to...

Prepare, draw up and develop projects in the field of industrial engineering; organise and plan for businesses and organisations; manage the activities entailed by projects in the field of industrial engineering; conduct measurements, calculations, assessments, appraisals, expertise, studies, and prepare reports and work plans; resolve problems with initiative, creativity and critical reasoning; and work in multilingual, multidisciplinary surroundings.

CURRICULUM

FIRST YEAR 60 credits (48 in basic subjects + 12 in mandatory subjects)

Fall semester

- ***Linear Algebra (Full year)***
- ***Calculus (Full year)***
- ***Physics (Full year)***
- ***Gráficos de Ingeniería****
- ***Chemistry***

Spring semester

- ***Linear Algebra (Full year)***
- ***Calculus (Full year)***
- ***Physics (Full year)***
- ***Advanced Physics***
- ***Ampliación de Gráficos de Ingeniería****
- Informática

SECOND YEAR 60 credits (12 in basic subjects + 48 in mandatory subjects)

Fall semester

- ***Advanced Maths***
- Estadística
- ***Fundamentals of Material Science***
- Mecánica
- ***Fluid Mechanics***

Spring semester

- ***Advanced differential Equations***
- Economía
- ***Electrical Engineering***
- Mecánica Aplicada
- ***Thermodynamics***

THIRD YEAR 60 credits (60 de asignaturas obligatorias)

Fall semester

- ***Analysis and operation of Electrical Machines (Full year)***
- ***Teoría de Mecanismos y Vibraciones Mecánicas (Full year) ****
- ***Automática y Control****
- Elasticidad y Resistencia de Materiales
- ***General Electronics***
- ***Thermotechnics***

Spring semester

- ***Analysis and operation of Electrical Machines (Full year)***
- ***Teoría de Mecanismos y Vibraciones Mecánicas (Full year)****
- ***Advanced Numerical Methods***
- Cálculo Elástico de Sólidos
- ***Chemical technology***

FOURTH YEAR 60 créditos (30 de asignaturas obligatorias + 24 de optativas + 6 Trabajo Fin de Grado)

Fall semester

- ***Proyectos de Ingeniería (Full year)****
- Tecnología Eléctrica
- Tecnología Mecánica

Electives

- *Cálculo de Máquinas (P1)***
- ***Materiales Estructurales: Comportamiento en Servicio y Mecánica de Fractura (P1)****
- *Automatización Industrial (P2)***
- ***Electrónica Industrial (P2)*****
- *Centrales Nucleares (P3)***
- *Energías Alternativas (P3)***
- ***Ingeniería Térmica (P3) (Full year)*****
- *Ingeniería de las Reacciones Químicas (P4)***
- *Máquinas Térmicas e Hidráulicas (P4)***
- Norma y Uso de la Lengua Vasca

Spring semester

- ***Proyectos de Ingeniería (Full year)****
- ***Environmental Science and Technology***
- Organización de Empresas

Electives

- *Elementos de Máquinas (P1)***
- *Teoría de Estructuras y Construcción (P1)***
- *Control por Computador (P2)***
- *Integración de Tecnologías de Generación en el Sistema Eléctrico (P2)***
- *Centrales Fluidomecánicas (P3)***
- ***Ingeniería Térmica (P3) (Full year)*****
- *Ciencia e Ingeniería de Materiales (P4)***
- *Procesos de Separación y Purificación (P4)***
- Comunicación en Euskera: Ingeniería

FINAL PROJECT

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PRE-INTENSIFICATIONS *to choose among P** electives*

Under Pre-intensification (P), students acquire additional skills in a specific field that prepare them to deal with it in the graduate programme, subject to completing 24 credits.

- Preintensificación Ingeniería Mecánica (P1)
- Preintensificación Tecnologías Eléctrica, Electrónica y Control (P2)
- Preintensificación Técnicas Energéticas (P3)
- Preintensificación Ingeniería Química (P4)

BSc in TELECOMMUNICATION TECHNOLOGY ENGINEERING

Field of Knowledge: Engineering and Architecture

Telecommunications are the future –but they are also the present. The latest advances in Information and Communication Technologies and the wide variety of their practical applications, with infinite possibilities for development and evolution, make versatile professionals trained in the broad aspects of this discipline indispensable.

The engineering degree in Telecommunication Technology Engineering will train you to design telematic systems for entertainment and multimedia services, to implement communications systems for telephony or aeronautics, and to develop the equipment necessary for these and other applications.

At the UPV/EHU, this degree has three majors: Telecommunications Systems, Telematics, and Electronic Systems.

To obtain the full Telecommunication Technology Engineering qualification, it is necessary to take the Master's Degree in Telecommunications Engineering, to which this degree gives you direct access.

If you are interested in technologies and, more specifically, information and communication technologies, you have organisational capacity, you want to contribute to improving communications in our society and you have aptitudes in mathematics and physics, the engineering degree in Telecommunications Technologies is what you are looking for.

This degree will prepare you to...

Draw up, develop and sign projects in the field of telecommunications engineering; understand principles of economics, human resources management, project planning and organisation; conduct measurements, calculations, assessments, appraisals, expertise, studies, and prepare reports and work plans; resolve problems with initiative and creativity; and work in multilingual, multidisciplinary surroundings.

CURRICULUM

FIRST YEAR 60 credits (60 in basic subjects)

Fall semester

- ***Algebra***
- ***Análisis de Circuitos****
- Cálculo I
- ***Basic Electronics***
- ***Physics (Full year)***

Spring semester

- ***Calculus II***
- Dispositivos y Circuitos Electrónicos
- Economía
- Estadística
- ***Treatment of Signals***
- ***Physics (Full year)***

SECOND YEAR 60 credits (9 in basic subjects + 51 in mandatory subjects)

Fall semester

- ***Arquitectura de Redes y Servicios de Telecomunicación (Full year)****
- Ampliación de Física
- ***Advanced Mathematics***
- Fundamentos de Programación

Spring semester

- ***Arquitectura de Redes y Servicios de Telecomunicación (Full year)****
- ***Campos Electromagnéticos****
- ***Digital Electronics***
- Programación en Entornos Distribuidos
- ***Teoría de la Comunicación****

THIRD YEAR 60 credits (42 in mandatory subjects + 18 in electives)

Fall semester

- Electrónica de Circuitos
- Electrotecnia y Electrónica de Potencia
- Planificación de Redes y Modelado
- Sistemas de Telecomunicación
- Sistemas Digitales

Spring semester

- Arquitectura de Sistemas de Información
- ***Sistemas de Radiocomunicación****

Electives

- Comunicaciones Móviles (M1)
- Procesado de Señales Multimedia (M1)
- ***Sistemas de Alta Frecuencia (M1)****
- ***Electrónica para la Conversión de Energía (M2)****
- Instrumentación Electrónica (M2)
- ***Sistemas Electrónicos de Alimentación (M2)****
- ***Redes de Acceso (M3)****
- ***Redes de Transporte (M3)****
- Servicios Telemáticos Avanzados (M3)

FOURTH YEAR 60 credits (6 in mandatory subjects + 42 in electives + 12 in Final Project)

Fall semester

- ***Proyectos de Ingeniería (Full year)****

Electives

- Antenas y Propagación (M1)
- Comunicaciones Ópticas (M1)
- Tecnología de Sistemas de Telecomunicación (M1) (Full year)
- Diseños Basados en Microprocesadores (M2)
- Laboratorio de Sistemas Digitales (M2)
- Tecnología de Sistemas Electrónicos (M2)
- ***Redes y Servicios Móviles (M3)****
- Servicios Multimedia (M3)
- Tecnología de Ingeniería Telemática (M3) (Full year)
- Administración de Empresas
- Automatización y Comunicaciones Industriales
- ***Fundamentos de Ciencia de Materiales****
- Norma y Uso de la Lengua Vasca
- Tecnología de la Instalaciones Eléctricas

Spring semester

- ***Proyectos de Ingeniería (Full year)****

Electives

- ***Radar y Sistemas de Navegación por Satélite (M1)****
- Sistemas de Radio y Televisión Digital (M1)
- Tecnología de Sistemas de Telecomunicación (M1) (Full year)
- ***Circuitos de Telecomunicación (M2)****
- ***Laboratorio de Electrónica de Comunicaciones (M2)****
- ***Despliegue y Gestión de Redes y Servicios (M3)****
- Técnicas Avanzadas de Programación (M3)
- Tecnología de Ingeniería Telemática (M3) (Full year)
- Comunicación en Euskera: Ingeniería
- Liderazgo y Emprendizaje
- Óptica Aplicada a las Telecomunicaciones
- Simulación Numérica del Comportamiento de Sistemas Gobernados por Ecuaciones Diferenciales

FINAL PROJECT

* **English Friendly Courses (EFC)** are those degree subjects which, while being taught in Spanish, offer the syllabus, along with tutoring, diverse tasks, examinations, etc., in English.

MAJOR FIELDS OF KNOWLEDGE

- Sistemas de Telecomunicación (M1)
- Sistemas Electrónicos (M2)
- Telemática (M3)

BSc in ELECTRICAL ENGINEERING

Field of Knowledge: Engineering and Architecture

All manufacturing processes require electricity to power, operate and control the machinery concerned. This makes electrical engineers indispensable in industry.

Electrical engineering concerns itself with the design, construction and installation of machinery, as well as the electrical facilities or systems used in power generation, transport, distribution and consumption. The integration of the renewable energies in this field is one of the challenges of electrical engineering, an expanding sphere in constant development on both the European and global scale.

In the Electrical Engineering degree, you will specialise in high-voltage electrical circuits. You will study and design electric power generation, distribution and transformation systems to power and run equipment, the electrical networks of buildings and city power grids, among others.

If you are a methodical, analytical person enthusiastic about electrical systems and their workings, with aptitudes in mathematics, physics and chemistry, the degree in Electrical Engineering is the ideal qualification for you.

This degree will prepare you to...

Draw up and develop industrial engineering projects to build, repair, install and assemble power, electric and electronic facilities and design manufacturing and automation processes; formulate hypotheses and electrical solutions using the models proper to industrial engineering; assess the social and environmental impact of technical solutions; resolve problems with initiative and creativity; and work in multilingual, multidisciplinary surroundings.

CURRICULIM

FIRST YEAR 60 credits (60 in basic subjects)

Fall semester

- Cálculo (Full year)
- Expresión Gráfica (Full year)
- Fundamentos Físicos de la Ingeniería (Full year)
- Fundamentos Químicos de la Ingeniería (Full year)
- Álgebra
- Fundamentos de Informática

Spring semester

- Cálculo (Full year)
- Expresión Gráfica (Full year)
- Fundamentos Físicos de la Ingeniería (Full year)
- Fundamentos Químicos de la Ingeniería (Full year)
- Métodos Estadísticos de la Ingeniería

SECOND YEAR 60 credits (6 in basic subjects + 54 in mandatory subjects)

Fall semester

- Fundamentos de Tecnología Eléctrica (Full year)
- Mecánica Aplicada (Full year)
- Ciencia de Materiales
- Electrónica Industrial
- ***Thermal Engineering***

Spring semester

- Fundamentos de Tecnología Eléctrica (Full year)
- Mecánica Aplicada (Full year)
- Automatismos y Control
- Economía y Administración de Empresas
- Mecánica de Fluidos
- Sistemas de Producción y Fabricación

THIRD YEAR 60 credits (60 in mandatory subjects)

Fall semester

- Electrónica de Potencia
- Instalaciones de Baja y Media Tensión
- Máquinas Eléctricas
- Regulación Automática

Spring semester

- Centrales Eléctricas y Energías Renovables
- Control de Máquinas y Accionamientos Eléctricos
- Instalaciones de Alta Tensión
- Líneas Eléctricas y Sistemas Eléctricos de Potencia

FOURTH YEAR 60 credits (24 in mandatory subjects + 24 in electives + 12 in Final Project)

Fall semester

- Gestión de Proyectos
- Organización de la Producción
- Sistemas de Gestión Integrada
- ***Environmental Technologies***

Electives

- Norma y uso de la lengua vasca

Spring semester

Electives

- Comunicación en Euskera: Áreas Técnicas
- ***English for Industrial Engineering***
- Francés Técnico
- Historia de la Electrotecnia
- Mantenimiento y Diagnóstico de Máquinas e Instalaciones Eléctricas
- Metrología Eléctrica
- Simulación y Ensayo de Máquinas Eléctricas

FINAL PROJECT

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BSc in INDUSTRIAL ELECTRONICS AND AUTOMATION ENGINEERING

Field of Knowledge: Engineering and Architecture

Engineering in Industrial and Automation Electronics is a practical degree ubiquitous and applicable to majority of the strategic sectors in the country, in fields that have a strong tradition in our environment, such as machine tools, automation, aeronautics, robotics, microelectronics, and in other fields such as medicine, agriculture, merchandise distribution, traffic management, power generation and distribution, etc.

After finishing this degree, you will know how to design electronic circuits, develop electronic systems to improve instruments and production process automation, and design, analyse and develop control systems for industrial processes.

If you have always been curious about electronics and cannot resist dismounting electronic devices and circuits to put them back together again, if you are enthusiastic about

robotics, renewable energy, electric transport, communications, home automation or industrial electronic systems,

your place is the engineering degree in Industrial and Automation Electronics.

This degree will prepare you to...

Draw up and develop industrial engineering projects to build, repair, install and assemble power, electric and electronic facilities and design manufacturing and automation processes; formulate hypotheses and electrical solutions in terms of industrial electronics using the models proper to industrial engineering; assess the social and environmental impact of technical solutions; resolve problems with initiative and creativity; and work in multilingual, multidisciplinary surroundings.

CURRICULUM

FIRST YEAR 60 credits (60 in basic subjects)

Fall semester

- Cálculo (Full year)
- Expresión Gráfica (Full year)
- Fundamentos Físicos de la Ingeniería (Full year)
- Fundamentos Químicos de la Ingeniería (Full year)
- Álgebra
- Fundamentos de Informática

Spring semester

- Cálculo (Full year)
- Expresión Gráfica (Full year)
- Fundamentos Físicos de la Ingeniería (Full year)
- Fundamentos Químicos de la Ingeniería (Full year)
- Métodos Estadísticos de la Ingeniería

SECOND YEAR 60 credits (6 in basic subjects + 54 in mandatory subjects)

Fall semester

- Fundamentos de Tecnología Eléctrica (Full year)
- Mecánica Aplicada (Full year)
- Ciencia de Materiales
- ***Thermal Engineering***
- Electrónica Industrial

Spring semester

- Fundamentos de Tecnología Eléctrica (Full year)
- Mecánica Aplicada (Full year)
- Automatismos y Control
- Economía y Administración de Empresas
- Mecánica de Fluidos
- Sistemas de Producción y Fabricación

THIRD YEAR 60 credits (60 in mandatory subjects)

Fall semester

- Electrónica Analógica
- Electrónica Digital
- Informática Industrial
- ***Automatic Regulation***
- Tecnología Electrónica

Spring semester

- Automatización Industrial
- Electrónica de Potencia
- Instrumentación Electrónica
- ***Robotics***
- Sistemas Electrónicos Digitales

FOURTH YEAR 60 credits (24 in mandatory subjects + 24 in electives + 12 in Final Project)

Fall semester

- Gestión de Proyectos
- Organización de la Producción
- Sistemas de Gestión Integrada
- ***Environmental technologies***

Electives

- Norma y Uso de la Lengua Vasca

Spring semester

Electives

- Comunicación en Euskera: Áreas Técnicas
- Diseño y Construcción de Equipos Aplicados a la Electrónica Industrial
- ***English for Industrial Engineering***
- Francés Técnico
- Instrumentación Virtual
- Modelado y Simulación de Sistemas
- Sistemas Digitales de Control

FINAL PROJECT

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BSc IN MECHANICAL ENGINEERING

Field of Knowledge: Engineering and Architecture

Mechanics focuses on the design of machinery, engines, mechanisms and systems and thus relates very much to innovation in industry. It is concerned with formulating, preparing, directing, executing and operating technical projects in the general field of industrial engineering and in the specific field of mechanical engineering.

The degree in Mechanical Engineering will prepare you for the profession of technical industrial engineer in the major field of mechanics, which is concerned with designing, calculating, testing, installing and operating machines, mechanical devices, industrial structures and installations, such as lifting and transport machinery, machine tool devices, power and cooling installations, etc.

You will learn how to organise and direct production, operation and maintenance tasks and to manage activities related to product launching on the market.

If you are a creative person gifted at numbers, abstract comprehension, logical reasoning and deduction, with a facility for basic subjects such as mathematics, physics, chemistry and graphic expression, the degree in Mechanical Engineering is perfect for you.

This degree will prepare you to...

Draw up and develop industrial engineering projects to build, repair, install and assemble mechanical structures and equipment, power, electric and electronic facilities and design manufacturing and automation processes; formulate hypotheses and solutions in terms of mechanics using the models proper to industrial engineering; assess the social and environmental impact of technical solutions; resolve problems with initiative and creativity; and work in multilingual, multidisciplinary surroundings.

CURRICULUM

FIRST YEAR 60 credits (60 in basic subjects)

Fall semester

- Cálculo (Full year)
- Expresión Gráfica (Full year)
- Fundamentos Físicos de la Ingeniería (Full year)
- Fundamentos Químicos de la Ingeniería (Full year)
- Álgebra
- Fundamentos de Informática

Spring semester

- Cálculo (Full year)
- Expresión Gráfica (Full year)
- Fundamentos Físicos de la Ingeniería (Full year)
- Fundamentos Químicos de la Ingeniería (Full year)
- Métodos Estadísticos de la Ingeniería

SECOND YEAR 60 credits (6 in basic subjects + 54 in mandatory subjects)

Fall semester

- Fundamentos de Tecnología Eléctrica (Full year)
- Mecánica Aplicada (Full year)
- Ciencia de Materiales
- Electrónica Industrial
- ***Thermal Engineering***

Spring semester

- Fundamentos de Tecnología Eléctrica (Full year)
- Mecánica Aplicada (Full year)
- Automatismos y Control
- Economía y Administración de Empresas
- Mecánica de Fluidos
- Sistemas de Producción y Fabricación

THIRD YEAR 60 credits (60 in mandatory subjects)

Fall semester

- Ampliación de Expresión Gráfica
- Cinemática y Dinámica de Máquinas
- Elasticidad y Resistencia de Materiales
- Tecnología Mecánica

Spring semester

- Diseño de Máquinas
- Estructuras y Construcciones Industriales
- Instalaciones y Máquinas Hidraúlicas
- Instalaciones y Máquinas Térmicas

FOURTH YEAR 60 credits (24 in mandatory subjects + 24 in electives +12 in Final Project)

Fall semester

- Gestión de Proyectos
- Organización de la Producción
- Sistemas de Gestión Integrada
- **Environmental Technologies**

Electives

- Norma y uso de la lengua vasca

Spring semester

Electives

- Arquitectura Industrial
- Comunicación en Euskera: Áreas Técnicas
- Diseño Mecánico Mediante Elementos Finitos
- ***English for Industrial Engineering***
- Fabricación de Utillaje
- Francés Técnico
- Ingeniería de Superficies, Recubrimientos y Adhesivos
- Mecánica de Fluidos Computacional

FINAL PROJECT

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BSc IN COMPUTER ENGINEERING IN MANAGEMENT AND INFORMATION SYSTEMS

Field of Knowledge: Engineering and Architecture

The success of companies and organisations is largely based on the implantation and proper use of information systems. Entities use IT tools to do their daily work and employ professionals to generate and organise the information. This is why this degree finds application in all work sectors and areas.

The degree in Information Management and Systems Engineering will prepare you to conceive, design, develop and deploy computerised solutions adapted to the needs of organisations as well as to describe, plan, direct and manage projects in the field of computer engineering.

In addition, it will prepare you as a professional to determine organisational or company information management and system needs in order to integrate ICT solutions into business processes with an eye to security-related aspects and legal compliance.

If your mind is structured in binary code, you like computers and you understand their operation, you can grasp simple scientific and technical texts in English and are good at numbers, abstract comprehension, logical reasoning and deduction, your profile is ideal for the degree in Information Management and Systems Engineering.

This degree will prepare you to...

Design, develop and maintain information systems, services and applications using the methods of software engineering; plan and sign projects; develop centralised or distributed information systems or architectures that integrate hardware, software and networks; evaluate and select hardware and software platforms; and design IT system, service and application accessibility, ergonomics, usability and safety.

CURRICULUM

FIRST YEAR 60 credits (42 in basic subjects + 18 in mandatory subjects)

Fall semester

- Análisis Matemático
- Fundamentos de Tecnología de Computadores
- Matemática Discreta
- Principios de Diseño de Sistemas Digitales
- Programación Básica

Spring semester

- Álgebra
- Cálculo
- Estructura de Computadores
- Metodología de la Programación
- Programación Modular y Orientación a Objetos

SECOND YEAR 60 credits (18 in basic subjects + 42 in mandatory subjects)

Fall semester

- Arquitectura de Computadores
- Economía y Administración de Empresas
- Estructuras de Datos y Algoritmos
- Lenguajes, Computación y Sistemas Inteligentes
- Métodos Estadísticos de la Ingeniería

Spring semester

- Bases de Datos
- Ingeniería del Software
- Introducción a las Redes de Computadores
- Introducción a los Sistemas Operativos
- Investigación Operativa

THIRD YEAR 60 credits (60 in mandatory subjects)

Fall semester

- Análisis y Diseño de Sistemas de Información
- Diseño de Bases de Datos
- Organización de la Producción
- Sistemas de Gestión de Seguridad de Sistemas de Información
- Sistemas de Gestión Integrada

Spring semester

- Administración de Bases de Datos
- Gestión de Proyectos
- Sistemas de Apoyo a la Decisión
- Sistemas Web
- Software de Gestión de Empresa

FOURTH YEAR 60 credits (48 in electives +12 in Final Project)

Fall semester

Electives

- Calidad del Software
- Interacción Persona Computador
- Minería de Datos
- Multimedia
- Norma y Uso de la Lengua Vasca
- Programación Práctica de PLCs
- Técnicas de Inteligencia Artificial

Spring semester

Electives

- Administración de Sistemas
- Aspectos Profesionales de la Informática
- Comunicación en Euskera: Áreas Técnicas
- Desarrollo Avanzado de Software
- Desarrollo de Aplicaciones Web Enriquecidas
- Diseño de Sistemas Informáticos de Gestión Empresarial
- ***English for Information Technology***
- Francés Técnico
- Software para Matemática Aplicada

FINAL PROJECT

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BSc IN CIVIL ENGINEERING

Field of Knowledge: Engineering and Architecture

City development is intimately linked to the construction of infrastructures that facilitate the lives of people. Roads, tunnels, bridges, ports and airports have contributed to the evolution and improvement of communications. All these structures would be unthinkable without the intervention of Civil Engineering.

The degree in Civil Engineering will provide you with the proper technical training to face the different stages of civil works and hydrology projects (planning, projection, execution, operation, control and evaluation) with scientific, technical and socially responsible criteria, using resources rationally, efficiently and sustainably.

If you are a person with a capacity for calculation, abstract thinking, logical reasoning and spatial vision, you like fieldwork and you have skills in draughtsmanship, physics and mathematics, the degree in Civil Engineering is your qualification.

This degree will prepare you to...

Conduct studies in territorial planning and environmental aspects related to infrastructures; project, inspect and manage works; maintain and preserve water and energy resources; understand the technical and legal conditions related to the construction of public works; and use methods and technologies to improve efficiency in construction subject to respect for the environment and for personal safety and health.

CURRICULUM

FIRST YEAR 60 credits (60 in basic subjects)

Fall semester

- Cálculo (Full year)
- ***Fundamentos Físicos de la Ingeniería (Full year)****
- Álgebra y Geometría
- Expresión Gráfica I
- Química

Spring semester

- Cálculo (Full year)
- ***Fundamentos Físicos de la Ingeniería (Full year)****
- Expresión Gráfica II
- Geología
- Informática

SECOND YEAR 60 credits (6 in basic subjects + 54 in mandatory subjects)

Fall semester

- Teoría de Estructuras (Full year)
- ***Materials Science***
- Ingeniería y Morfología del Terreno
- Mecánica de Fluidos e Hidráulica
- Tecnología Eléctrica

Spring semester

- Teoría de Estructuras (Full year)
- Hidrología Superficial y Subterránea
- Organización de Empresas
- Procedimientos de Construcción
- Topografía

THIRD YEAR 60 credits (60 in mandatory subjects)

Fall semester

- Gestión de Recursos Hidráulicos e Instalaciones (Full year)
- Infraestructura del Transporte (Full year)
- Construcción y Obras
- Puertos y Obras Marítimas
- Tecnología de Estructuras I

Spring semester

- Gestión de Recursos Hidráulicos e Instalaciones (Full year)
- Infraestructura del Transporte (Full year)
- Obras de Abastecimiento y Saneamiento
- ***Power Systems***
- Tecnología de Estructuras II

FOURTH YEAR 60 credits (30 in mandatory subjects + 18 in electives + 12 in Final Project)

Fall semester

- Aguas y Medio Ambiente
- Edificación
- Ingeniería Ambiental
- ***Proyectos de Ingeniería****
- Seguridad y Legislación

Electives

- Norma y uso de la lengua vasca

Spring semester

Electives

- Acústica y Control de Ruido para Obras Civiles
- Aplicaciones de DAO en Ingeniería Civil
- Comunicación en Euskera: Áreas Técnicas
- Energética en la Edificación
- Materiales en la Construcción
- Modelización, Simulación y Optimización Matemática en Ingeniería Civil
- Sistemas de Información Geográfica
- Sondeos e Inyecciones

FINAL PROJECT

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BSc IN MINING AND ENERGY ENGINEERING

Field of Knowledge: Engineering and Architecture

Underground urban development is contributing towards broadening urban horizons by implementing, for example, our public transport network and improving our quality of life. Mining and energy engineers intervene in tunnels, underground networks and high-speed railway infrastructures, since they are the only professionals authorised to use explosives for blasting in civil works and mining.

Mining and energy engineers also work with geological, maritime and land resources to obtain fuel and products to transform for industry.

In addition, you will have the possibility of specialising in one of these two majors: Mining, where you will be trained to project, plan and manage mining operations; and Energy, where you will learn about the prospection, exploitation, storage, distribution and use of energy resources and the manufacture and use of explosives.

If you are a person with spatial vision, you like fieldwork and have basic knowledge of draughtsmanship, physics and mathematics, the engineering degree in Mining and Energy Technology is doubtless the qualification that suits your capabilities.

This degree will prepare you to...

Conduct measurement, reframing, planning and mapping, calculations, assessments, risk analyses, expertise, studies and reports, social and environmental impact studies in the field of mining engineering; plan and manage projects, plants or installations; and design mechanical and electrical installations, power transport grids, solid, liquid or gas transport and storage facilities; manage dumpsites, demolitions, blasting operations and explosives logistics.

CURRICULUM

FIRST YEAR 60 credits (60 in basic subjects)

Fall semester

- Cálculo (Full year)
- ***Fundamentos Físicos de la Ingeniería (Full year)****
- Álgebra y Geometría
- Expresión Gráfica I
- Química

Spring semester

- Cálculo (Full year)
- ***Fundamentos Físicos de la Ingeniería (Full year)****
- Expresión Gráfica II
- Geología
- Informática

SECOND YEAR 60 credits (6 in basic subjects + 54 in mandatory subjects)

Fall semester

- ***Materials Science***
- Ingeniería y Morfología del Terreno
- Matemáticas Aplicadas a la Ingeniería
- Mecánica de Fluidos e Hidráulica
- Tecnología Eléctrica

2º Cuatrimestre

- Electrónica y Sistemas de Control
- Fundamentos del Análisis Estructural
- Organización de Empresas
- Termodinámica
- Topografía

THIRD YEAR 60 credits (6 in mandatory subjects + 54 in electives)

Fall semester

- Tecnología de Explosivos

Electives

- Instalaciones Térmicas y Energías Alternativas (M1) (Full year)
- Explotación de Recursos Energéticos (M1)
- Motores Térmicos (M1)
- Operaciones Básicas (M1)
- Instalaciones Eléctricas (M2)
- Laboreo de Minas (M2)
- Tecnología Minera I (M2)
- Topografías Especiales (M2)

Spring semester

Electives

- Ingeniería Nuclear y Protección Radiológica (M1)
- Instalaciones Hidráulicas y Gestión de Recursos (M1)
- Instalaciones Térmicas y Energías Alternativas (M1) (Full year)
- Refino del Petróleo y Petroquímica (M1)
- Tecnología de Combustibles I (M1)
- Construcción (M2)
- Fabricación de Materiales (M2)
- Hidrogeología (M2)
- Mineralurgia (M2)
- Ordenación del Territorio (M2)
- Tecnología Minera II (M2)

FOURTH YEAR 60 credits (18 in mandatory subjects + 30 in electives + 12 in Final Project)

Fall semester

- Ingeniería Ambiental
- ***Proyectos de Ingeniería****
- ***Seguridad y Legislación Minera****

Electives

- Energía Eléctrica (M1)
- Tecnología de Combustibles II (M1)
- ***Minerales y Rocas Industriales (M2)****
- Técnicas de Restauración y Corrección (M2)
- Norma y Uso de la Lengua Vasca

Spring semester

Electives

- Comunicación en Euskera: Áreas Técnicas
- Conformación y Soldadura
- Diseño Técnico Industrial
- Energética en la Edificación
- Ingeniería de las Aleaciones
- Metalurgia Extractiva
- Procesado de Materiales
- Siderurgia
- Sistemas de Información Geográfica

FINAL PROJECT

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MAJOR FIELDS OF KNOWLEDGE

- Energía (M1)
- Minas (M2)

BSc in MARINE STUDIES

Field of Knowledge: Engineering and Architecture

The sea is the means of transport that has historically been used the most to carry merchandise and passengers. Today, it continues to serve as an indispensable means of transport that requires professionals familiar with all its technical aspects.

The degree in Marine Engineering will train you to conduct activities related to the design, maintenance and operation of any industrial installation, on sea as well as on land. In the latter case, you will be obliged to undergo 3 months of mandatory internship on board or 600 hours in land-based companies.

In addition, you will be able to specialise in the following career paths or majors: Energy and Propulsion, and Industrial Maintenance.

Once you obtain the degree in Marine Engineering, in order to navigate you need the Merchant Marine Engineer Officer qualification. And to access the career of Chief Engineer Officer of the Merchant Marine, you have to take the Master's Degree in Marine Engineering.

To obtain the professional qualifications of the Merchant Marine, you must pass the medical check-up of the Marine Labour Institute (Instituto Social de Marina), which is mandatory for internship as well as for professional services on board merchant vessels.

If you are interested in the industrial and maritime world, with a capacity for reasoning, knowledge of mathematics, physics, chemistry, technical draughtsmanship and English, the Marine Engineering degree is the option that best suits your tastes and capabilities.

This degree will prepare you to...

Direct, manage and organise the proper operation of power and propulsion installations in vessels, as well as land-based industrial maintenance; conduct inspections, measurements, assessments, appraisals and prepare reports

and certifications for installations in maritime and terrestrial contexts; resolve problems with initiative, creativity and critical reasoning; and work in groups in multilingual, multidisciplinary surroundings.

CURRICULUM

FIRST YEAR 60 credits (60 in basic subjects)

Fall semester

- ***Expresión Gráfica (Full year)***
- Informática (Full year)
- Física I
- ***English I***
- Matemáticas I
- Química

Spring semester

- Expresión Gráfica(Full year)
- Informática (Full year)
- Empresa
- Física II
- ***English II***
- Matemáticas II

SECOND YEAR 60 credits (60 in mandatory subjects)

Fall semester

- Construcción Naval
- Seguridad del Buque y Prevención de la Contaminación
- Teoría del Buque
- Termotecnia y Mecánica de Fluidos

Spring semester

- Derecho Marítimo
- Electrónica y Automática
- Electrotecnia y Propulsión Eléctrica
- Mecánica y Resistencia de los Materiales
- Seguridad Aplicada
- Sistemas Principales y Auxiliares

THIRD YEAR 60 credits (48 in mandatory subjects + 12 in electives)

Fall semester

- Calderas y Turbinas de Vapor I
- Ciencias y Técnicas de los Materiales
- Instrumentación, Regulación y Control
- Motores de Combustión Interna I
- Técnicas de Frio y Climatización

Spring semester

- Oficina Técnica
- Tecnología Mecánica
- Transportes Especiales

Electives

- Calderas y Turbinas de Vapor II (M1)
- Motores de Combustión Interna II (M1)
- Electrónica de Potencia y Motores Eléctricos (M2)
- Técnicas de Mantenimiento (M2)
- Norma y Uso de la Lengua Vasca

FOURTH YEAR 60 credits (30 in mandatory subjects + 18 in electives +12 in Final Project)

Fall semester

Electives

- Automatización Naval (M1)
- Instalaciones Marítimas (M1)
- Montajes y Mediciones (M1)
- Propulsión Eléctrica (M1)
- Elasticidad y Resistencia de Materiales (M2)
- Gestión Integral de Mantenimiento (M2)
- Prevención de Riesgos Laborales (M2)
- Comunicación en Euskera: Áreas Técnicas
- Regulación Automática

Spring semester

- Prácticas en Buques

FINAL PROJECT

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MAJOR FIELDS OF KNOWLEDGE

- Energía y Propulsión (M1)
- Mantenimiento Industrial (M2)

BSc IN NAUTICAL STUDIES AND MARITIME TRANSPORT

Field of Knowledge: Engineering and Architecture

There is a long maritime tradition in the Basque Country. The sea is closely linked to our culture. Merchandise and passenger transport has doubtless contributed to the social and economic development of our country. We have been and continue to be people of the sea.

Currently, the sea transport of merchandise continues to be primordial, but other additional uses have emerged, such as tourism or sports. The degree in Navigation and Maritime Transport will teach you to conduct activities related to navigation and maritime transport management, with topics such as astronomy, meteorology, radar navigation or stevedoring and the manipulation of merchandise.

During the last year, you will be obliged to do 3 months of mandatory internship on board or 600 hours in land-based companies. It is necessary to undergo the medical check-up at the health services of the Marine Labour Institute (Instituto Social de Marina).

Once you obtain the degree, you must complete 12 months on board as a student in order to become Second Mate in the Merchant Marine. And to obtain the professional qualification of Merchant Marine Captain, you have to take the Master's Degree in Navigation and Maritime Transport Engineering.

If you are a person who loves the sea, if adventure motivates you and you dream of spending a great part of the year aboard a vessel, if you have talent for command and leadership and a capacity for coexistence and reasoning as well as knowledge of mathematics, physics, chemistry, technical draughtsmanship and English, the degree in Navigation and Maritime Transport is the ideal qualification for you.

This degree will prepare you to...

Manage and organise activities necessary for vessel navigation, transport, port or marine installations to operate properly; conduct inspections, measurements, assessments, appraisals, expertise and studies, and prepare certifications for installations in nautical-maritime and terrestrial contexts; resolve problems with initiative, creativity and critical reasoning; and work in groups in multilingual, multidisciplinary surroundings.

CURRICULUM

FIRST YEAR 60 credits (60 in basic subjects)

Fall semester

- Expresión Gráfica (Full year)
- Informática (Full year)
- Física I
- ***English I***
- Matemáticas I
- Química

Spring semester

- Expresión Gráfica (Full year)
- Informática (Full year)
- Empresa
- Física II
- ***English II***
- Matemáticas II

SECOND YEAR 60 credits (60 in mandatory subjects)

Fall semester

- Construcción Naval
- Derecho Marítimo
- Maniobra, Reglamentos, Señales y Radiocomunicaciones
- Seguridad del Buque y Prevención de la Contaminación
- Teoría del Buque

Spring semester

- Electrónica y Automática
- Electrotecnia y Propulsión Eléctrica
- Navegación de Estima, Navegación Costera
- Seguridad Aplicada
- Sistemas Principales y Auxiliares

THIRD YEAR 60 credits (48 in mandatory subjects + 12 in electives)

Fall semester

- Aplicaciones de Teoría del Buque y Construcción Naval
- Estiba y Manipulación de Mercancías
- Meteorología
- Radionavegación y Plan de Viaje
- Seguridad Operativa en Buques Tanque y Mercancías Peligrosas

Spring semester

- Maniobra y Guardia en Puente
- Meteorología, Oceanografía y Derrota Óptima
- Navegación Astronómica

Electives

- Derecho Comercial Marítimo I (M1)
- Economía Marítima y Portuaria (M1)
- Derecho de la Navegación y Frases Normalizadas de la OMI (M2)
- Navegación con Radar y Radar de Punteo Automático (M2)
- Norma y Uso de la Lengua Vasca

FOURTH YEAR 60 credits (30 in mandatory subjects + 18 in electives +12 in Final Project)

Fall semester

Electives

- Comercio Internacional y Logística (M1)
- Derecho Comercial Marítimo II (M1)
- El inglés del Transporte y la Logística (M1)
- Determinación y Compensación de los Desvíos del Compás (M2)
- Hidrodinámica, Resistencia y Propulsión Marina (M2)
- Maniobras y Posicionamiento Dinámico (M2)
- Práctica de la Navegación (M2)
- Comunicación en Euskera: Áreas Técnicas

Spring semester

- Prácticas Externas

FINAL PROJECT

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MAJOR FIELDS OF KNOWLEDGE

- Gestión de Empresas Marítimas y Logística (M1)
- Navegación Marítima (M2)

POSTGRADUATE PROGRAMMES

In Spain, certain Engineering practices require the completion of certain Master programmes. Our Faculty of Engineering also offers other postgraduate programmes.

MASTERS LEADING TO PROFESSIONAL ACCREDITATION

- Industrial Engineering
- Telecommunication Engineering
- Marine studies
- Nautical studies and Maritime Transport

OTHER POSGRADUATE MASTERS

- Ciencia y Tecnología Espacial
- Contaminación y Toxicología Ambientales
- Control in Smartgrids and Distributed Generation
  Erasmus Mundus en Medio Ambiente y Recursos Marinos
- Erasmus Mundus Master in Language and Communication Technologies (LCT)
- Europeo en Dirección de Proyectos - Euro MPM
- Ingeniería Ambiental
- Investigación en Ingeniería Ambiental
- Ingeniería Energética Sostenible
- Ingeniería en Organización Industrial
- Ingeniería de Control, Automatización y Robótica
- Ingeniería de la Construcción
- Ingeniería de Materiales Avanzados
- Ingeniería de Materiales Renovables
- Ingeniería Energética Sostenible
- Ingeniería Mecánica
- Ingeniería Química
- Ingeniería de Sistemas Empotrados
- Ingeniería Biomédica
- Ingeniería Informática
- Ingeniería Computacional y Sistemas Inteligentes
- Integración de las Energías Renovables en el Sistema Eléctrico
- Investigación en Eficiencia Energética y Sostenibilidad en Industria, Transporte, Edificación y Urbanismo
- Máster en Gestión del Paisaje. Patrimonio, Territorio y Ciudad
- Nuevos Materiales
- Sistemas de Transporte
- Sistemas Electrónicos Avanzados
- Offshore Renewable Energy (MORE)

To consult the complete offer in graduate studies:
www.ehu.eus/es/web/estudiosdeposgrado-graduondokoikasketak

This brochure is merely informative.
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