Universitat de Lleida

Master's degree self- assessment report

ASIIN (EUR-ACE®, Euro-Inf®)

2021

Polytechnic School

DOCUMENT ESBORRANY

EN PROCÉS DE REVISIÓ LINGÜÍSTICA I TÈCNICA

Approval date	**Appred by**
07 / 09 / 2021	Internal Evaluation Commission
08 / 09 / 2021	University Evaluation Commission

Index

Acronyms and Initialisms

	Significat	**Significado**	**Meaning**
ACUP	Associació Catalana d'Universitats Públiques	Asociación Catalana de Universidades Públicas	Catalan Association of Public Universities
ADE	Grau en Administració i Direcció d'Empreses	Grado en Administración y Dirección de Empresas	Bachelor's degree in Business Administration and Management
AQU	Agència per a la Qualitat del Sistema Universitari de Catalunya	Agencia para la Calidad del Sistema Universitario de Cataluña	Agency for the Quality of the University System of Catalonia
BOE	Butlletí Oficial de l'Estat	Boletín Oficial del Estado	Official State Gazette
CAE	Comité d'Avaluació Extern	Comité de Evaluación Externo	External Evaluation Commission
CAI	Comité d'Avaluació Intern	Comité de Evaluación Interno	Internal Evaluation Commission
CAU	Comissió d'Avaluació de la Universitat	Comisión de Evaluación de la Universidad	University Evaluation Commission
CFGS	Cicle Formatiu de Grau Superior	Ciclo Formativo de Grado Superior	Higher education training cycle
CV	Campus virtual	Campus Virtual	Virtual Campus
EPS	Escola Politècnica Superior	Escuela Politécnica Superior	Polytechnic School
ETSEA	Escola Tècnica Superior d'Enginyeria Agrària	Escuela Técnica Superior de Ingeniería Agraria	School of Agrifood and Forestry Science and Engineering
GATE	Grau en Arquitectura Tècnica i Edificació	Grado en Arquitectura Técnica y Edificación	Bachelor's degree in Architectural Technology and Building Construction
GEEIA	Grau en Enginyeria Electrònica Industrial i Automàtica	Grado en Ingeniería Electrónica Industrial y Automática	Bachelor's degree in Automation and Industrial Electronic Engineering
GEES	Grau en Enginyeria de l'Energia i Sostenibilitat	Grado en Ingeniería de la Energía y Sostenibilidad	Bachelor's degree in Energy and Sustainability Engineering
GEI	Grau en Enginyeria Informàtica	Grado en Ingeniería Informática	Bachelor's degree in Computer Engineering
GEM	Grau en Enginyeria Mecànica	Grado en Ingeniería Mecánica	Bachelor's degree in Mechanical Engineering
HIDA	Hores impartides de docència a l'aula	Horas impartidas de docencia en el aula	Teaching hours taught in the classroom
INSPIRES	Institut Politècnic d'Innovació i Recerca en Sostenibilitat	Instituto Politècnico de Innovación e Investigación en Sostenibilidad	Polytechnic Institute of Research and Innovation in Sustainability
MEIND	Màster en Enginyeria Industrial	Máster en Ingeniería Industrial	Master's degree in Industrial Engineering
MEINF	Màster en Enginyeria Informàtica	Máster en Ingeniería Informática	Master's degree in Informatics Engineering
PAS	Personal d'Administració i Serveis	Personal de Administración y Servicios	Administration and Services Personnel
PAU	Proves d'Accès a la Universitat	Pruebas de Acceso a la Universidad	University Entrance Exams
PDI	Personal Docent i Investigador	Personal Docente e Investigador	Teaching and Research Staff
PTE	Pràctiques Tutelades en Empresa	Prácticas Tuteladas en Empresa	Internship
RUCT	Registre d'Universitats, Centres i Títols	Registro de Universidades, Centros y Títulos	Registry of Universities, Centers and Titles

	Significat	**Significado**	**Meaning**
SGIQ	Sistema de Garantia Interna de la Qualitat	Sistema de Garantía interna de la Calidad	Internal Quality Assurance System
EPI	Equip de protecció individual	Equipo de protección individual	Personal Protective Equipment
CIC	Consell Interuniversitari de Catalunya	Consejo Interuniversitario de Cataluña	Interuniversity Council of Catalonia
EEES	Espai Europeu d'Educació Superior	Espacio Europeo de Educación Superior	European Higher Education Area
MECES	Marc Espanyol de Qualificacions per a l'Educació Superior	Marco Español de Cualificaciones para la Educación Superior	Spanish Higher Education Qualifications Framework
TFG	Treball de Fi de Grau	Trabajo de Fin de Grado	Bachelor's thesis
TFM	Treball de Fi de Màster	Trabajo de Fin de Màster	Master's thesis

A) About the Accreditation Procedure

This report on the accreditation of the Master's Degree in Computer Engineering and the Master's Degree in Industrial Engineering of the Polytechnic School has been prepared during the months of June and July 2021. This report is part of the Internal Phase of the accreditation process of EPS and which consists of the following stages:

- Constitution of the Internal Evaluation Committee (CAI)
- Preparation of the Accreditation report and collection of evidence.
- Publicity of the report.
- Report approvals.
- Sending the report to ASIIN and access to the evidence.
- Preparation of the students' achievements corresponding to the subjects selected by the External Evaluation Committee (CAE).

This process began on 06/02/2021 with a meeting to present the accreditation process, which was attended by the Center's Management and the coordinators involved (0_01_EPS_Reunió accitacions 2021.pdf), where the guidelines for the drafting of the self-report and the work schedule was established (0_02_Cronograma.pdf).

On 06/17/2021, the date on which the Study Commission that acts as the School Quality Assurance Commission met, the Internal Evaluation Committee (CAI) of the accreditation process was set up (0_03_EPS_Acta 2021-06-17. pdf). It should be noted that the composition of the CAI guarantees the participation of all university groups (PDI, PAS and students) in the assessment of training programs.

Regarding the accreditation process, specific meetings have been held with the teaching staff, the students and the PAS to complete the Accreditation Report. Likewise, different university services have been contacted (Library and Documentation Service, International Relations Office, Institute of Continuing Education and Training Sciences, etc.) in order to obtain specific information. Once all the information has been collected, it has been presented jointly, in the form of a report, to all members of the CAI. The evidence (0_04_EPS_Conv_CAI.pdf) contains the minutes of the IAC meeting where the draft report was presented prior to public exposure. It should be noted that all groups (PDI, PAS and students) have representation on this committee. Once the comments, evaluations and corrections of the committee have been incorporated, a complete version has been prepared, which has been publicly exposed (0_05_EPS_ExPublica.pdf). Comments from all EPS groups have been received, and these have been included in the report, which contains the supporting evidence.

As a consequence of the overall process, this self-accreditation report has been drafted collaboratively. It can be seen that the sections regarding each degree have been deployed by each programme coordinator. This collaborative process reduces the uniformity among the sections, but enriches the contributions within the framework of each programme.

General data

Website of the Higher Education Institution	University of Lleida (UdL) http://udl.cat/ca/en/studies/poficials_eng/ http://udl.cat/ca/en/studies/studies_bycentres/
Faculty / Department offering the Degree Programme	Polytechnic School

Seals applied for

Name of the degree programme (in original language)	**(Official) English translation of the name**	**Labels applied for**[1]	**Previous accreditation (issuing agency, validity)**	**Involved Technical Committees (TC)**[2] (will be completed by ASIIN)
Máster en Ingeniería Industrial (MEIND)	Master's degree in Industrial Engineering	EUR-ACE®	ASIIN, 08.04.2016 - 30.09.2021	
Máster en Ingeniería Informática (MEINF)	Master's degree in Informatics Engineering	Euro-Inf®	ASIIN, 08.04.2016 - 30.09.2021	

B) Characteristics of the Degree Programme/s

a) Name	Final degree (original / English translation)	b) Areas of Specialization	c) Corresponding level of EQF [3]	d) Mode of Study	e) Double / Joint Degree	f) Duration	g) Credit points / unit	h) Intake rhythm & First time of offer
Máster en Ingeniería Industrial (MEIND)	Ingeniero Industrial/ Master's degree in Industrials Engineering		Level 7	Full time / time		4 semester	120 ECTS	20 2014-15
Máster en Ingeniería Informática (MEINF)	Ingeniero Informático/ Master's degree in Informatics Engineering	. Enterprise Resource Planning Systems . Big Data Analytics . Video Game Development . Enterprise Integrated Projects	Level 7	Full time / part time		3 semester	90 ECTS	20 2011-12

C) Self-assessment for ASIIN-Seal

1. The Degree Programme: Concept, content & implementation

Criterion 1.1 Objectives and learning outcomes of a degree programme (intended qualifications profile)

In Spain, Bachelor's and Masters degrees are regulated by Royal Decree RD 1393/2007, modified by RD 861/2010. Since the adaptation of the Spanish university system to the framework of the EEES, the structure of university studies in Spain distinguishes between Bachelor's degrees (4 years of study, usually 240 ECTS) and Master's degrees (1-2 years, between 60 and 120 ECTS).

In addition, the Spanish Government establishes specific rules for the degrees of the called "regulated professions", as is the case of engineering. These professions have specific legislation that defines the competences that the student must acquire at the end of their studies:

Order CIN/351/2009. establish the requirements for the verification of official university degrees that enable the exercise of the profession of Industrial Technical Engineer. This is the case of the GEM and GEEIA Bachelor's degrees. When designing the GEES curriculum, the indications of this same order have been followed. In this way, the content of the first and second years constitute a common core between the three Bachelor's degrees. This allows the student to make the decision to choose one of the three degrees when he has more knowledge.

Order CIN/311/2009 establish the requirements for the verification of official university degrees that enable the exercise of the profession of Industrial Engineer. This is the case of the MEInd (Master's degree in Industrial Engineering).

Resolution of June 8, 2009 establish recommendations for official degrees in the fields of Computer Engineering (MEInf. Master's degree in Computer Engineering) and Computer Technical Engineering (GEI)

As indicated in the previous evaluation, the Polytechnic School began to work on adapting its teachings to the EEES in 2007. To carry out this adaptation, it was necessary to detect the needs of all the parties involved, which required the participation of both social agents: companies, public and private institutions and Alumni (external agents) from each engineering sector, as well as from the different university groups, represented by the teaching staff, the Administration and Services Personnel (PAS) and the students (internal agents) . It should be noted that in the search for external agents, the Social Council of the UdL played a crucial role, organizing different meetings with external agents.

This procedure followed the Director Plan for Teaching at the University of Lleida, approved by the University Governing Council on June 10, 2007. Likewise, given the complexity of the process of adaptation of the UdL degrees, the Unit of Teaching Planning was created. The purpose of this unit was to give support to the university community to carry out the adaptation of the UdL to the new EEES framework, in accordance with current regulations and the policy

of the Vice-Rectorate of Teaching of the UdL.

The first step in this procedure consisted in deciding which undergraduate degrees should be implemented in the EPS; To this end, a set of meetings / encounters with the different agents were set up in order to detect the training, economic and social needs of our environment. The internal agents prepared a proposal based on the availability of the Center and the departments that taught, which was submitted to the external agents. This proposal consisted of the vertical deployment of the EPS with the aim of implementing long-term first-degree and second-cycle degrees (Master's degrees) in the three branches of engineering at the School (IT, Industrial and Building). Through a meeting for each engineering sector with external agents, this proposal was agreed upon and an important challenge was reached, such as the support of society for the vertical development model proposed by the School.

All the evidences related to the process of preparing the study plans are listed by the code 1_02_EPS. The evidence presented is the composition of the committees for the preparation of the study plans, the minutes of the School Board, the agreements of the academic associations and decrees with requirements for the design of the study plans, the working documents prepared by the Ministry of Education and the Guidelines of the University of Lleida, the White Books of the different degrees, the surveys carried out to social agents on the design of competencies, the results of these surveys and the list of social agents who participated in the process.

The Degree Map project proposed to replace each of the existing technical engineering with a new degree. This proposal culminated in the approval of the Map of Degrees of the Polytechnic School:

• Degree in Computer Engineering

• Degree in Building Engineering

• Degree in Electronic, Industrial and Automatic Engineering

• Degree in Mechanical Engineering

Once the reports of the degrees were finalized, the School proceeded to start the process of implementing the two master's degrees currently taught at the School: Master's in Industrial Engineering and Master's in Computer Engineering.

For the design of the study plans, three phases were established with the participation of various agents:

- Definition of competencies: Internal and external agents
- Preparation and approval of study plans: Internal agents prepare the proposal, consult external agents and the agree. Approval will be made by the governing bodies of the school: Study Commissions and the Center and University Board: Governing Council.
- Preparation and approval of reports: The reports will be prepared by the management team of the Center and will be approved by the governing bodies of the School: Study Commission and Center Board.

To define the competencies of each degree, the following were considered:

1. The competencies defined in the royal decrees that regulate the engineering professions.
2. The transversal competences that each University and School could define. As a result of the collaboration of the different groups, the list of Transversal Competences of the Polytechnic School was drawn up. This list would be the reference for the preparation of future study plans for degrees and masters and would complement the strategic competences of the University of Lleida and those specific to each degree. The strategic competencies of the EPS were approved by the Plenary Commission of the Degrees of Industrial Engineering, Computer Engineering and Building Engineering on June 16, 2008.

It must be said that in the three fields of study, Industrial, Computer Science and Technical Architecture, monitoring commissions were established, basically channeled through professional associations that meet with the main objective of monitoring the development of the degrees, as well how to generate initiatives that improve them. As a result of these commissions, the Awards for the Best Academic Record and the Award for the Best Final Degree and Master Project of each degree are awarded.

The implementation of the Master in Industrial Engineering was the culmination of a very old claim of the professional sector of Industrial Engineering in our environment. It should be noted that until 2010, the start date of these new master's studies, students from Lleida who wanted to continue their studies in Industrial Engineering had to travel to Barcelona, Terrassa or Zaragoza to study second cycle, which caused a great lack of qualified professionals in the Industrial Engineering sector. This fact caused the professional sector, channeled by the College of Industrial Engineers of Catalonia (demarcation of Lleida), to firmly support the implementation of these studies and actively participate both in the preparation of the study plan,

Regarding the Master's Degree in Computer Engineering, work began a year later, given that the School already taught Second-cycle Computer Engineering studies. Following the same criteria used with the Master in Industrial Engineering, a commission was defined in which a representative of the Association of Information Technology Companies of Lleida (AETI) participated, considering the strong roots that this association has in Lleida and that it represents to the vast majority of companies in the city's ICT sector.

MASTER IN INDUSTRIAL ENGINEERING

The objectives, competencies and learning results of the Master of Industrial Engineering (MEIND) are collected in the report of the degree reviewed periodically and verified by external evaluation committees. Also, as it is an approved official degree, its structure can be consulted in the register of Universities, Centers and Titles (RUCT) (https://www.educacion.gob.es/ruct/home) of the Ministry of Education with the code 4314785. The publication in the DOGC was made in ORDER ECO / 83/2015, of March 27 (https://dogc.gencat.cat/ca/document-del-dogc/?documentId=691547) with the code 4312290. In addition, to facilitate access to such information, it is also included on the master's degree website, which is continually updated and fully accessible

(http://www.masterindustrial.udl.cat/en/).

The design of the MEIND has been defined respecting the guidelines established in Royal Decree 1393/2007, of October 29, which establishes the organization of official university education, and the ORDER CIN / 311/2009, of February 9, which establishes the requirements for the verification of official university degrees that enable the exercise of the profession of Industrial Engineer

For the development of the objectives and learning outcomes of the degree, an internal commission approved by the School Center Board (EPS) was set up, which took place on December 20, 2007 (Act No. 61). This commission was represented by all the groups involved in the university together with the participation of different social agents representing the industrial sector, professional associations, companies and professionals, which are listed in chapter 2.4 of the memory of the degree.

The objectives were defined so that in addition to acquiring knowledge and knowing how to apply it, they acquire professional skills and abilities in accordance with the current law that regulates it. The participation of the different groups involved was key to developing a study structure in accordance with the title of the degree, reaching the best levels of excellence.

The objectives of the programme perfectly summarize the training profile of an industrial engineer. They are correctly founded and are represented by the competences assigned in each of the subjects that make up the learning modules. These competences have been classified into different types according to whether they are basic, transversal or specific. Its formative binding nature is carried out with the teaching guides of the subjects, which very clearly specify the objectives, competencies and expected results. Their information is updated and synchronized according to the memory of the degree, likewise, they are periodically reviewed at the beginning and end of each academic year.

The objectives and learning outcomes that are specified in the degree, are feasible and fully coincide in their actual implementation. In addition, they are in accordance with the learning criteria described in the respective Subject-Specific Criteria ASIIN (SSC), and guarantee the capacities to practice in professional activities related to the master degree.

MASTER IN COMPUTER ENGINEERING

The objectives, competences and learning outcomes of the Master in Computer Engineering are included in the memory of the degree, periodically reviewed and updated, and verified by external evaluation committees. Like all approved official degrees, the relevant information can be consulted in the Registry of Universities, Centers and Titles (RUCT) (https://www.educacion.gob.es/ruct/home) of the Ministry of Science, Innovation and Universities. In this record it contains the code:4312823. The authorization for its teaching was published in the DOGC with order ECO / 96/2013, of May 21, 2013 (http://portaldogc.gencat.cat/utilsEADOP/PDF/6388/1302915.pdf) and in the BOE of February 8, 2013 (https://www.boe.es/boe/dias/2013/02/08/pdfs/BOE-A-2013-1334.pdf). The verification of the study plan was published in the BOE of December 17, 2015 (https://www.boe.es/boe/dias/2015/12/17/pdfs/BOE-A-2015-13762.pdf).

In the School Board (EPS), which took place on December 20, 2007 (Act No. 61), a commission was set up to prepare a master's degree proposal for each of the EPS teaching branches: computer science, industrial engineering and construction. This commission was made up of representatives of the groups involved in the university together with different social agents of the sector: associations, companies and professionals. This commission prepared the study plan for the Master in Computer Engineering in accordance with the guidelines of the Resolution of June 8, 2009, of the General Secretariat of Universities, defining the modules and subjects and assigning the competences to each of the subjects that constitute the master.

Finally, the study plan for the Master in Computer Engineering was approved by the EPS Center Board, held on December 23, 2010 at the Polytechnic School of the University of Lleida.

The learning objectives of the master's degree have been designed to allow students to acquire the knowledge and professional skills required by law, as well as those that allow quality professional performance. The contribution resulting from the participation of all the groups involved played a key role, and continues to be so, so that the master's degree structure has levels of excellence in line with what society expects.

The objectives of the degree have been designed so that the master's degree graduate has a training profile in accordance with what is expected for a Computer Science Engineer. These objectives are met and achieved as learning outcomes in the different subjects that make up the modules that give structure to the master. These competences are grouped into various classes: basic, transversal or specific according to their particularities and scope. The teaching guides of the subjects serve to map these competencies to achieve the objectives and results of the title. The binding nature of these guides, which are periodically updated and reviewed prior to the begining of the academic year, in synchrony with the memory of the degree, serves as a basic tool that shapes the master's degree.

The design of the curriculum, as well as its implementation, which follows the learning objectives and outcomes specified in the programme memory, is feasible and in accordance with the learning criteria described in the respective Subject-Specific Criteria ASIIN (SSC). These objectives guarantee the capacities to exercise in professional activities related to the degree.

Criterion 1.2 Name of the degree programme

MASTER IN INDUSTRIAL ENGINEERING

The name of the degree is appropriate based on the training profile, structure and defined content. The name has always been in accordance with the results obtained in learning and has been maintained since it was approved by the Council of Ministers on January 29, 2009 (BOE No. 25, page 9885). Later, with the Order CIN / 311/2009, of February 9, establishes the requirements for the verification of official university degrees that enable the exercise of the profession of Industrial Engineer. The changes made to the degree so far, all non substantial,[Uc1][u2] described in Criterion 1.3 of this report, do not generate any type of disagreement with the initial training objectives and competencies. The correct adaptation of the title name remains in force.

MASTER IN COMPUTER ENGINEERING

The name of the Master's programme is appropriate to the training profile, structure and defined content. Such denomination has always been in accordance with the specifications established in the Resolution of June 8, 2009, of the General Secretariat of Universities, publicizing the Agreement of the Council of Universities, which regulates degrees in the field of Computer Engineering. The name of the Master in Computer Engineering complies with Section 1.1 of Annex I for the degrees that give access to the profession of Computer Engineer.

The changes made to the degree so far, not substantial and substantial, described in Criterion 1.3 of this report, do not generate any type of disagreement with the initial competencies and training objectives. The correct adaptation of the title name remains in force.

Criterion 1.3 Curriculum

MASTER IN INDUSTRIAL ENGINEERING

The MEIND study plan consists of 120 ECTS, distributed in 2 academic courses with 30 ECTS per semester, where 78 ECTS are core / compulsory subject, and 24 are elective ECTS. Among elective subjects 12 ECTS correspond to leveling subjects according to the access degree of each student, while the remaining 12 are grouped into 5 blocks of various topics. Finally, 18 ECTS are established for the Master's Final Project. Criterion 2.1 details its structure and modules.

The design of the degree was positively verified by ASIIN on April 8, 2016. The verification commission resolved that the study plan was consistent with the competency profiles and the objectives of the degree, allowing the correct development of skills.

Subsequently, on July 28, 2020, the agency for the quality of the university system in Catalonia, issued a favorable result for the evaluation of the accreditation proposal of the study plan that leads to the official university degree of the University master's degree in Industrial Engineering. In its report, most of the improvement points were related to ensure the achievement of the same competency profile and the temporality in the acquisition of competences between students in dual training and students in traditional training. For this reason, the center's management has already drawn up its own Dual Training Methodological Framework because there is still no official regulation on this topic.

Since the last accreditation by ASIIN, the entire structure, objectives and competencies of the master's degree have been maintained, only 4 non-substantial changes have been made that have not affected the profile of competencies or the planned objectives, on the contrary, have been actively implemented improving the natural functioning of the degree. It should be noted that the correspondence between the validated report and its actual delivery is total, not only in the non-substantial changes made but in the entire structure of the study plan defined from the beginning of the degree.

The information on the objectives of the degree, competences and structure of the study plan, detailing the different training modules and teaching guides for each subject, is available and updated with access to the general public on the degree website (http: //www.masterindustrial.udl.cat/es/). Likewise, all non-substantial changes have always been introduced in the memory of the degree, have been updated in the informative channels of the center, and have been given successfully in the following academic years since their approval in the Study Commission and its subsequent ratification by the Governing Council of the UdL. The modifications that have occurred since the last verification of the degree by ASIIN[JB3] are detailed below, being all of them non-substantial:

- Year 15/16. Non-substantial modification Approved by the Governing Council of the UdL on ** 06/2016 ** (agreement / 2016). *Creation of a new option line*.
    - The opening of this elective line consists of two subjects of 6 ECTS each. These subjects will be offered in the second semester (S2) of the second year

(C2). These subjects are called Enterprise Projects I and Enterprise Projects II.

- Year 15/16. Non-substantial modification Approved by the Governing Council of the UdL in **** (agreement / 2016). *Incorporation of a new evaluation system*
    - The evaluation system of the Dual Training Learning notebook is incorporated, and it will be applied to students who take the Enterprise Projects subjects, in the dual training modality.

- Year 15/16. Non-substantial modification Approved by the Governing Council of the UdL in **** (agreement / 2016). *Semester allocation.*
    - A semester correction of the Industrial Organization II subject is indicated, with the purpose that what is indicated in the memory really reflects without inconsistencies the subject planning. The subject of Industrial Organization II is taught in the first year, second semester, and not in the second year, second semester, as wrongly indicated in the subject sheet.

- Course 21/22. Non-substantial modification Approved by the Governing Council of the UdL on February 19, 2021 (agreement 18/2021). *New competence.*

  Introduce the new transversal competence "Apply the gender perspective to the tasks of the professional field". This competence has been assigned to the subject Control, Certifications and Auditing of the basic training of the degree. This is how the learning outcomes are extended with:

  Know how to embroider assigned projects and research work integrating variables of sex and gender.

  This competence is included in order to comply with the requirement of the AQU to assess the deployment of the gender perspective.

Regarding the gender perspective, apart from the incorporation of a new competence, equality measures are being promoted in the writing and content of the teaching guides and presentation materials and follow-up of the degree by viewing bibliographic material written by women and language inclusive without discrimination.

MASTER IN COMPUTER ENGINEERING

The structure of the programme of the Master in Computer Engineering at the Polytechnic School of the University of Lleida is the result of integrating the guidelines established in Royal Decree 861/2010, of July 2, which modifies RD 1393 / 2007, of October 29, which establishes the organization of official university teachings, with the recommendations of the Council of Universities for the proposal by the Universities of Memories of Application for Official Titles in the field of Computer Engineering (8 June 2009).

The Master's degree curriculum is structured in 90 ECTS, divided into two years, a first year of 60 ECTS and a second year of 30 ECTS. This study plan is divided into four modules, and these are organized, in turn, into subjects.

These subjects have been defined according to the competencies that a Computer Engineer must possess. Criterion 2.1 details the structure and modules of the Master. The degree was positively verified by ASIIN on April 8, 2016. This verification proved that the study plan met the qualification's profile of competencies and objectives.

Despite not modifying the study plan or the competences profile, the content of the subjects has been adjusted, logically, to adjust it to the reality of the market, and technological and scientific advances, obviously in a more obvious way in the subjects electives closer to the state of the art (such as Big Data, etc.).

Since the last accreditation, no substantial changes have been made in the structure of the master, changes that have not affected the competences or the objectives described in the report.

All the information on the objectives, competencies and structure of the degree's study plan in detail is publicly available, in an updated way, on the degree's website: www.masterinformatica.udl.cat. In addition, all the changes produced are collected in the memory of the degree, apart from being disseminated using the information channels of the center, and have been implemented in the courses following their approval by the relevant bodies (Study Commission and subsequent ratification by the Council of Government of the UdL).

The modifications that have occurred since the last verification of the degree by ASIIN:

- Year 2017/18. Non-substantial modification. Approved by the Governing Council of the UdL on March 30, 2017. Inclusion of new optional subjects: Enterprise Integrated Projects (Dual).
- Year 2017/18. Substantial modification. Approved by AQU on June 12, 2017. Introduction of a new specialty: Enterprise Integrated Projects.

  The new specialty, covered by the subject of Enterprise Integrated Projects (18 ECTS), allows the student to study this specialty through the dual training modality, based on the principle of complementarity of learning in an academic environment and in a professional environment. This training modality is carried out in alternation between the university and the company, and the student will be integrated into the business organization, participating in the design, management and development of real projects in the company. This is divided into three courses:
  - Enterprise Projects 1
  - Enterprise Projects 2
  - Enterprise Projects 3

  This training offer has the direct involvement of companies in the ICT sector in the economic and business environment of the territory. The student who takes this complete specialty will obtain a mention in the name of the degree.

- Year 2021/22. Non-substantial modification. Approved by the Governing Council of the UdL on April 22, 2021 (agreement 65/2021). Introduce the new transversal competence "Apply the gender perspective to the tasks of the professional field".

This competence has been assigned to the subject Technological Business Management and Entrepreneurship of the basic training of the degree, since it is the one that best fits with its content. This subject already included as competence: CG9. Ability to understand and apply ethical responsibility, legislation and professional deontology in the activity of the profession of Computer Engineering.

Since it provides students with competencies directly related to managerial skills, human resource management and product and / or business design, which make it the ideal placementto include the gender perspective in these competencies.

Regarding the gender perspective, apart from the incorporation of a new competence, equality measures have been incorporated in the writing and content of the teaching guides and presentation materials, equitable visual content in gender and inclusive language without discrimination. The effort made on the gender perspective in recent years is positively valued and is expected to have an effective impact on the social and inclusive training of students and therefore on society.

Criterion 1.4 Admission requirements

MASTER IN INDUSTRIAL ENGINEERING

Pre-registration and enrollment instructions are defined in the Academic regulations for official university master's studies of the UdL, which are updated in each academic year and approved by the Governing Council. Likewise, on the master's degree website (http://www.masterindustrial.udl.cat/es/futurs-estudiants/acces-admissio//), as it is a regulated profession, the general criteria for admission to the MEIND, the necessary training complements according to the access qualification, the EPS-UdL admission criteria, and additional information such as the pre-registration regulations are described. On the other hand, and with the aim of achieving greater diffusion, this website has been developed in three languages: Spanish, Catalan and English.

The evolution of the number of new students has been quite variable over the years. While in some years the 20 places offered are exceeded, as in the 16/17 academic year with 27 students and as expected for academic year 21/22, in other years such as 17/18 and 19/20 the number of new students was one of the lowest, specifically 12 students, which represents reaching 60% of the offer. That is, the percentage on the offer varies from 60% to 130%.
If the provenance data is analyzed, it can be seen that most of the students basically come from the university itself. This fact is due to this master's degree is heavily regulated, which means that universities have little room for maneuver to establish relevant differentiations between them. Furthermore, it is offered by most of the Catalan and state universities, which makes it difficult to attract students from other origins. If the few students who have enrolled in this master's degree from other universities are analyzed, it can be seen that they are students from the area who have completed a degree that is not offered by the UdL and who return to take the master's degree at home, or from students not born in the area, who have completed an industrial engineering degree at another university, but who, for work reasons, have settled in the surroundings of Lleida, and will to expand their training taking a master's degree at the UdL.

Despite all this, the UdL master's degree in Industrial Engineering has managed to establish a very clear differentiating characteristic with the rest of the universities, which is dual-modality training. This fact causes some attraction to foreign students, also from South American countries, since they consider it as an economic means for their maintenance. However since this master enables for the regulated profession of industrial engineer, the requirement of homologation of the stutent's degree in Spain prior to enrollment makes their enrollment to the master practically unfeasible. In order to overcome this situation, double international degrees programmes have been established, so students can obtain a Spanish degree which provides acces to the master programme.

Finally, it should be noted that the name "Industrial Engineer" in Spain differs from its use in the rest of the world. The profession of "Industrial Engineer" in Spain is a regulated profession with the capacity to sign projects, aimed at expanding engineering skills in different fields. It differs in concept, knowledge and skills from the title of "Industrial Engineer" in other countries, more focused on management.

Regarding the gender of the students, the proportion of women enrolled in the Master of Industrial Engineering is less than 10% and therefore lower than the average of the pattern of Industrial Engineering degrees of the university itself. In order to improve this percentage, in the last edition two former female students have been included among the speakers of the master's degree presentation sessions in order to incorporate their vision of the interest of said training. A set of specific promotions of the master's degree have also been planned in the degrees with the highest percentage of women, such as the Degree in Chemical Engineering offered in Igualada, in order to increase the proportion of women in the master's degree.

MASTER IN COMPUTER ENGINEERING

Admission profiles and access routes to master's studies, including those for this Master's, are defined in the Academic regulations for official university master's studies of the UdL, approved by the Governing Council of the UdL. Admission profiles and access routes are available on the web (http://www.masterinformatica.udl.cat/es/futurs-estudiants/acces-admissio/) in the three languages Spanish, Catalan and English.

Since the 17/18 academic year, the number of students enrolled in the master's degree has remained in an interval between 15 and 20 (the maximum number of possible entrants is 20 students since the teaching offer is 20 places), except in year 20 / 21 where the number of admitted has been very low, with only 9 admitted students, still having to analyze the effect of Covid19 on student access.

Of the students of the master's degree, except for this last year, there has been a slight rise in the number of students from the UdL itself, from 12 to 16 between 17/18 and 19/20, until the decrease to 3 of the year 20 /twenty-one.
Regarding international students, said number ranges between 1 and 6 each year, this last year being 6 (surpassing the students from the UdL itself)-The presence of this international students greatly enriches the teaching experience since, language aside, the vision and background, both technical and personal, of the students is very varied.

With regard to the gender of the students, the proportion of women enrolled in the Master's degree in Computer Engineering follows the same pattern as in the Degree in Computer Engineering, since, naturally, the source of origin of the master's students is their studies degree, either at the UdL or at other universities. The proportion thus remains at around 10% of female students.

2. The Degree Programme: Structures, Methods & Implementation

Criterion 2.1 Structure and modules

MASTER IN INDUSTRIAL ENGINEERING

The Master in Industrial Engineering consists of 120 ECTS, distributed in 4 semesters, of 30 ECTS each. The study plan is divided into 5 modules, and these are organized, in turn, into subjects. These subjects have been defined taking into account the competencies and objectives described for the master's degree, which in turn determine the contents to be taught and their corresponding training activities and evaluation systems.

The following table shows the modules that make up the study plan, together with their corresponding ECTS.

STRUCTURE OF THE SECURITY CREDITS	**CREDITS**
Industrial technology module (I)	36
Installations, plants and complementary constructions module (II)	18
Management module (III)	24
Optional training module (IV)	24
Master's thesis module (V)	18
TOTAL CREDITS	120

All the modules listed in the previous table must be taken compulsorily.

The subjects that make up these modules of the curriculum, along withtheir semester distribution, as well as the associated ECTS, are shown in the following tables, depending on whether they are taught in the first year or in the second year.

FIRST COURSE

SUBJECT	**MODULE**	**SEMESTER**	**CREDITS**
Generation and Distribution of Energy	I	1	6
Unit Operations of Chemical Processes	I	1	6
Electrical Installations and HVAC Systems	II	1	6
Industrial Organization 1	III	1	6
Elective 1	IV	1	6
Advanced Manufacturing Systems	I	2	6
Machine Design and Testing 1	I	2	6
Industrial Structures 1	II	2	6
Industrial Organization 2	III	2	6
Elective 2	IV	2	6

It should be noted that the subjects that make up electives 1 and 2 are directed since they are established according to the degree of Industrial Engineering that a student has taken before joining the master.

DIRECTED ELECTIVES

OPTION 1
Structural and Mechanical Analysis
Systems Engineering

OPTION 2
Thermohydraulics
Feedback Control

SECOND COURSE

SUBJECT	MODULE	SEMESTER	CREDITS
Thermal and Hydraulic Machines	I	1	6
Electronics and Control Systems Design	I	1	6
Control, Certifications and Auditing	II	1	6
Business Administration and Organizational Structures	III	1	6
Project and Human Resources Management	III	1	6
Elective 3	IV	2	6
Elective 4	IV	2	6
Master Thesis	V	2	18

Up to 5 different groups of optional subjects have been established, in order to integrate the different training possibilities that may appear. Thus, the Mobility group is for integrating mobility students, the Business Projects group is aimed at students in dual modality training, while energy systems, mechanical systems and control systems are for students who study the master's degree in ordinary training.

Energetic systems
Electric machinery in industry
Analysis of industrial thermal equipment

Mechanical systems
Design of metal structures
CAE studies of machine elements

Control systems
Industrial instrumentation

Dynamic and control systems

Enterprise projects (dual training)
Enterprise projects I
Enterprise projects II

Mobility
Mobility I
Mobility II

Finally, the master's degree includes the completion of a mandatory Master's Thesis (TFM), regulated by the regulations approved by the School Board of 12/23/2010 (http://www.eps.udl.cat/ docs / info_acad / normatives / tfg / current / normative / Reglament_TFG_i_TFM.html).

MASTER IN COMPUTER ENGINEERING

The Master in Computer Engineering consists of 90 ECTS, distributed in 3 semesters, of 30 ECTS each. The study plan is divided into four modules, and these are organized, in turn, into subjects.

These subjects have been defined according to the competencies and objectives described for the master, which in turn determine the contents to be taught and their corresponding training activities and evaluation systems. The following table shows the modules that make up the study plan, together with their corresponding ECTS.

Denomination	Character	ECTS
MANAGEMENT MODULE	Mandatory	13.5
INFORMATION TECHNOLOGIES MODULE	Mandatory	40.5
	Specialty	18
OPTIONAL SUBJECTS MODULE	Optional	6
MASTER THESIS	Mandatory	12
	Total ECTS	90

All the modules listed in the previous table must be taken compulsorily.

The subjects that make up these modules of the proposed study plan, together with the ECTS associated with them, are shown in the following table:

MODULE			SUBJECT	
NAME	**Car.**	**ECTS**	**NAME**	**ECTS**
MANAGEMENT MODULE		13.5	IT Project Management	7.5
	OBLI		Technological Business Management and	6

			Entrepreneurship	
INFORMATION TECHNOLOGIES MODULE		40.5	ICT Project: Development and Implementation	9
			ICT Project: Communication Services and Security	9
			Evaluation Techniques and Usability Testing	4.5
	OBLI		Embedded and Ubiquitous Systems	4.5
			High Performance Computing	4.5
			Computer Graphics and Multimedia	4.5
			Intelligent Systems	4.5
	ESP	18	Enterprise Resource Planning Systems	18
			Big Data Analytics	18
			Video Game Development	18
			Enterprise Integrated Projects	18
			Mobility in Computer Technologies	18
OPTIONAL TRAINING MODULE	OPT	6	Business practice[Uc4][Uc5]	6
			Research	6
			Optional Add-ons[Uc6]	6
			Mobility	6
MASTER THESIS	OBLI	12	MASTER THESIS	12

The semester distribution of the subjects that make up the modules, together with the ECTS associated with them, is shown in the following table:

Course 1 - Semester 1	ECTS	Course 1 - Semester 2	ECTS
IT Project Management	7.5	Evaluation Techniques and Usability Testing	4.5
Computer Graphics and Multimedia	4.5	High Performance Computing	4.5
ICT Project: Development and Implementation	9	ICT Project: Communication Services and Security	9
Embedded and Ubiquitous Systems	4.5	Technological Business managementEntrepreneurship	6

Intelligent Systems	4.5	Specialty course	6
TOTAL ECTS	30	TOTAL ECTS	30
Course 2 - Semester 1	**ECTS**		
Optional Subjects Module	6		
Specialty courses	12		
Master Thesis	12		
TOTAL ECTS	30		
TOTAL ECTS of the MASTER		**90**	

From this Curriculum proposal it should be noted that students must take all the compulsory subjects, and must take 18 ECTS corresponding to subjects of some specialty subjects offered from the Information Technology module and an additional subject from the optional training module. The student who takes the 18 ECTS credits entirely in one of the following blocks: a) Big Data Analytics, b) Enterprise Resource Planning Systems, c) Video Game Development, d) Enterprise Integrated Projects will obtain a mention of the title in that specialty.

Likewise, the aforementioned study plan proposal includes an Optional Subjcts Module of 6 ECTS. It should be noted that each of the subjects in this optional training module has different characteristics:

- On the one hand, the subject of Internships in Business[Uc7] (6 ECTS) aims for the student to reinforce their teaching curriculum with a stay in an internship in a company.
- The optional Research course (6 ECTS) is aimed at those students who wish to continue their postgraduate studies with the completion of a Doctoral Thesis. In accordance with this objective, the student must carry out specific training in the research group where they wish to carry out their Doctoral Thesis.
- The Elective Supplements subject[Uc8] (6 ECTS) allows the student to complement the skills acquired in the chosen specialty with the knowledge that can be acquired by taking a subject from another specialty.
- The Mobility subject (6 ECTS) included in the optional training module, allows the possibility of the student taking some subjects of the computer science branch in a mobility programme, which are not included in this study plan.

In accordance with the Resolution of the Council of Universities of June 8, 2009 that defines the specifications of the master's degree in Computer Engineering, the master's degree includes the completion of a compulsory Master's Thesis (TFM), regulated by the regulations approved in the School Board of 12/23/2010 (http://www.eps.udl.cat/docs/info_acad/normatives/tfg/actual/normativa/Reglament_TFG_i_TFM.html). It should be noted that for those students who opt for the specialty of Mobility in Information Technology, it will be encouraged that the TFM is carried out at the destination university.

Criterion 2.2 Work load and credits

For each semester, the academic calendar is organized in 15 weeks devoted to lectures and tutorship and 4 weeks intended for tests, which are organized in:

- one week in the middle of the semester for the partial exams.
- two consecutive weeks at the end of the semester for the final exams
- one extra week devoted to recovery exams, for students who may have failed some part of the assesment.

The exams are scheduled avoiding overlapping and distributing them along the exam period. Furthermore, each subject organizes additional assesments bases on tests, projects, oral presentations, ...

From the School Direction, it was considered appropriate to carry out a study map of the degrees in order to analyze the level of workload of the students during the course to avoid load peaks due to the coincidence in time of a large number of practices and exams. A document was drawn up for each degree called "Map of Practices". This document is revised every 2-3 years

The lectures of each subject are scheduled weekly, so the workload can be distributed along the whole semester. The guide plans of each subjects specifies the expected workload.
[Uc9][Uc10][Uc11]

MASTER IN INDUSTRIAL ENGINEERING

The master's degree is taught in the afternoon, in the period from 3:00 p.m. to 9:00 p.m. making it easier for part-time students or those who study in dual mode,to combine both their academic and labor duties.
Likewise, in order to facilitate the monitoring of the subjects, the following distribution is established for the teaching of ECTS

40% face-to-face (including face-to-face assessment tests)
60% self-study.

Every subject in the master degree was a workload of 6 ECTS The Academic Framework of the school establishes that 1 ECTS corresponds to 25h of study. Hence, all subjects have a total workload of 150 hours, of which 60 are face-to-face and 90 correspond to autonomous work.

As the contents to be taught are very diverse between the subjects of the master's degree, the activities that are carried out in the contact hours are not uniform between subjects. Thus, in the face-to-face activities, in addition to traditional lectures, problem solving and laboratory practices, other activities such as seminars, visits to companies or facilities and visits to fairs are scheduled, which are highly valued by students.

The autonomous work part includes carrying out work and practice reports, which can be individual or in groups.

The result of this approach is translated into a performance rate (approved ECTS / enrolled

ECTS) that oscillates around 90% and an efficiency rate (enrolled ECTS per course / ECTS of the study plan) that with the exception of the last year is maintained in values greater than 95%.

	2016-17	2017-18	2018-19	2019-20	2020-21
Rate of return	91.8%	91.9%	86.9%	89.3%	92.6%
Efficiency rate	99.5%	98.8%	96.7%	95.6%	89.7%
Average graduation time	2.1	2.4	2.8	2.2	4.7

Finally, in relation to the students' workload, in conversations with them, it is found, as expected, that students in dual mode have a higher workload[Uc12], but bearable, while for students in traditional mode, they consider it adequate.

MASTER IN COMPUTER ENGINEERING

Given that a significant percentage of the students taking the master's degree are working, the master's degree is taught entirely in the afternoon, in the range from 5:00 [Uc13][Uc14]p.m. to 9:00 p.m. Likewise, in order to facilitate the follow-up of the subjects, the following definition of ECTS is established:

- 30% face-to-face (including face-to-face assessment tests)
- 10% tutored autonomous work. The teacher must leave a set of activities in the Virtual Campus of the subject that are resolved independently by the student, but with a high degree of tutelage by the teacher.
- 60% autonomous work.

Thus, for the different subjects that make up the study plan, the following distribution of hours will be planned, considering an ECTS definition of 25h:

ECTS	TOTAL HOURS	30% Face-to-face	10% Tutored Work	60% Autonomous Work
4.5	112.5	33.75	11.25	67.5
6	150	45	15	90
7.5	187.5	56.25	18.75	112.5
9	225	67.5	22.5	135

In order to facilitate the student's supervised work, the teaching staff who teach the master's degree undertake to comply with the following aspects:

- All teaching materials associated with the subjects must be posted on the Virtual Campus of the subject at the beginning of the semester.
- The teacher must define a week in advance the specific contents that will be worked on in the next face-to-face session of the subject.
- All the questions asked by the students in the CV must be answered in a maximum time of 24 hours.

Furthermore, the timetable allocates dayly time slots devoted to Group Lab, during which the Projects Lab is reserved for the master's students, who can freely use it for group working.abs, for group working

The result of this approach is translated into a performance rate (approved ECTS / enrolled ECTS) that oscillates around 90% and an efficiency rate (enrolled ECTS per course / ECTS of the study plan) that remains approximately 97% .

If we focus on the first year (since the second year / third semester includes the final master's thesis, as well as internships in a company, etc.), we will see that the submission rate (follow-up of studies) is above 90 %, and those of success and performance surpass 85% without problems.

Master's degree	**2017/18**	**2018/19**	**2019/20**	**2020/21**
Performance	96.7%	89.4%	95.6%	89.5%
Efficiency	92.1%	97.6%	96.8%	98.3%

1st year	**2017/18**	**2018/19**	**2019/20**	**2020/21**
Success	100%	100%	95.9%	89.8%
Performance	100%	87.4%	95.3%	86.9%

Criterion 2.3 Teaching methodology

Every year, the university holds a call for grants for projects to innovate and improve teaching. Its main objective is to motivate teachers in the search for active and innovative teachers' methodologies, in the development of teaching resources and materials that favor learning and the improvement of the evaluation process. EPS teachers actively participate in these calls. This information is expanded in criterion 4.2.

At the same time, EPS together with the Professional Associations, awards prizes with various financial endowments to the best Bachelor's Tesis (TFG) and Master Thesis (TFM). This distinction recognizes works with a high level of quality. To apply for one of the awards, the work must be published in RecerCAT. All the awards and distinctions can be consulted in the following link:
http://www.eps.udl.cat/ca/info_sobre/concursos_premis/

MASTER IN INDUSTRIAL ENGINEERING

As a general rule, the UdL Assessment and Qualification Regulations define that the assessment must be continuous throughout the entire teaching period of the subject. This leads to using methodologies that allow continuous work, among which the most used are problem-solving activities, laboratory practices in small groups and group work with or without public presentation. The most common specified methodologies in the definition of memory subjects are: lectures, problem solving and practices. On the other hand, and due to the fact that the number of enrolled is reduced, generally less than 20 students, it is feasible to visit companies or facilities, visit fairs, hold seminars, ... which add a bonus to the training of these students.

Some teachers have also been introducing new methodologies of active learning and self-learning, such as, for example, reverse class, reflective teaching (inquiry-based learning) and case studies. The teaching methodologies used in each subject are indicated in their teaching guide.

The UdL has a web platform called virtual campus (CV) that provides a virtual student-teacher working environment with a dedicated workspace for each subject. It has tools to share digital content, organize lesson contents temporarily, manage activities, take tests and questionnaires, publish qualifications, as well as an integrated videoconferencing system and communication tools such as forums, messages, announcements, etc. The use of this virtual platform has been key due to the situation of the pandemic that has forced teaching 100% online. Therefore, there has been a significant increase in its use and it is expected that the learning model is increasingly supported by the online tools offered by the CV.

The EPS has different laboratories to carry out the practices, which in recent years have been equipped through the investments of the successive calls for improvement of the EPS teaching infrastructures. These laboratories have been equipped in order to improve the more practical and specialized training activities in those subjects that require it.

The teaching staff of the UdL have a service called Support and Advice to Teaching Activity (http://www.saad.udl.cat/ca/) focused on providing the necessary pedagogical support to

improve current teaching methodologies. There is also the Teacher Training Unit (http://www.fpu.udl.cat/ca/) that offers different pedagogical training courses for teachers. Thanks to these services and also to the competitive call for innovation and improvement of teaching projects[Uc15] promoted by the Vice-Rector's Office for Academic Planning and Quality, the teaching staff of the master's degree has been able to improve teaching methodologies in recent years.

The students' assessment of whether the teaching methods used have been adequate is satisfactory. In the last academic years, 18/19, 19/10 and 20/21, these evaluations have remained constant, and specifically the average among teachers has been 3.9, 3.9 and 3.8 out of 5, respectively. In the same way, the average of the student's evaluations of the methodologies used in the last 3 years have been evaluated very positively with a result equal to or greater than 3.9 in this period.

MASTER IN COMPUTER ENGINEERING

The UdL Evaluation and Qualification Regulations, which regulate the evaluation of students, defines that the evaluation preferably has to be continuous throughout the entire teaching period of the subject. This preference is even more important, if possible, in a master's degree, most of which students are already integrated into the labor market or in research groups at the UdL.

An important aspect to highlight is the integration of Project-Oriented Learning (PBL) as a core and integral methodology of the curriculum. The purpose of this integration is twofold. In the first place, that the contents of the subjects are applied in a concrete way to the resolution of a real practical case. Secondly, integrate the subjects in the resolution of a larger project. This allows, on the one hand, to benefit from the good learning results provided by the project-based methodology, and on the other hand, it helps the student to visualize that the structure of the curriculum, the methodology and the learning results are aligned and integrated with the competencies that the market labor expects from a Senior Engineer. Specifically, in the first semester the subject called "ICT Project: Development and Implementation "aims to propose the development of an ICT project from a more technological point of view, while the subject of " IT Project Management" also develops its contents around the same proposed ICT project. Regarding the second semester, it is intended to give continuity to the ICT project by proposing quality of service and security solutions, in the subject "ICT Project: Communication Services and Security" but also to study the viability of the project from a business management point of view, or at the level of its usability and accessibility in the subject " Evaluation Techniques and Usability Testing". The rest of the subjects are also based on the use of the project-based methodology, but on a smaller scale, such as the three subjects which conform the Biga Data specialty, which work on a common data project.

All this implies that the working methods of the subjects are, for the most part, continuous work, generally in groups, highly applied, and are usually evaluated together with the work done through a public presentation (usually in the context of the subject itself). In some subjects, even external professionals from the companies participate in the assesment panels of this public presentations, providing the market labor point of view to students.

Therefore, master's courses use and take advantage of a wide range of teaching methods and techniques, from the master class to the reverse class, inquiry-based learning and case studies.

The exceptional situation of the last two years, due to the COVID-19 pandemic, has led to having to resort to other methodologies based, basically, on online learning, from videoconference classes to asynchronous video classes, simulations, debates and forums.

The UdL has an LMS (Learning Management System) that makes up the university's virtual campus. This virtual campus, based on the Sakai LMS platform, is used by some of the largest universities in the world, the UdL being one of the pioneers of its use in Europe, one of the oldest members of the Sakai foundation, and a participant in the development of the platform itself (especially in the support of multiple languages), which makes the support of said platform that they can provide from the university's ICT services is excellent. T[Uc16]he platform provides all the necessary tools for interaction between teachers and students, It can be used both to support face-to-face teaching (as it has traditionally been used at the UdL) and to support totally non-face-to-face teaching (as it has been used during some periods due to COVID-19). In this last year, the student has rated 4.3 out of 5 the use of the CV for their learning.

The methodologies and their development plan for each subject are clearly defined in their teaching guides, which are periodically updated and adapted according to their needs. Said teaching guides act both as a reference for students and as a "contract" between teachers and students on the conditions of evaluation and development of teaching.

The EPS has different laboratories to carry out the practical classes and laboratories, and many subjects of the master's degree are carried out entirely in these laboratories, so that, if master classes are required, these classes are already carried out in the laboratory, being able to go on to apply what was learned without delay (such allocation of classrooms is possible due to the size of the teaching groups in the master).

The professors of the UdL have a service called Support and Advice to Teaching Activity (http://www.saad.udl.cat/ca/) focused on providing the necessary pedagogical support to improve current teaching methodologies. There is also the Teacher Training Unit (http://www.fpu.udl.cat/ca/) that offers different pedagogical training courses for teachers[Uc17].

Criterion 2.4 Support and assistance

The academic and professional guidance that the school offers to students was rated very positively as "in progress to excellence" in the previous 2019 accreditation , highlighting the good level reached to date by the School in terms of advice, assistance and support for learning received by students.

The mechanisms through which the EPS satisfies the academic orientation are the Center's orientation and tutoring Plan, called in the UdL "Acompaña-Plan Néstor", the accompaniment of the Coordinator, the Mentoring of students, and the actions for recognition of academic excellence (awards and scholarships). On the other hand, in terms of support for professional guidance, the main services and activities are the Job Placement Plan, Tutored Internships in the Company, Dual Training, the Internationalization of the EPS, participation in the Industrial Doctorate program. , and various complementary activities such as the subject "Engineers and their socio-professional environment", specific talks that take place during the course, talks from professional associations and awards that they give to the best TFM, etc..

The main resources devoted to help, counseling and support to students are:

- **Class delegates**
  Each class provide one or two delegates. Their role is to represent the interests of the students and facilitate a quick and agile communication channel with professors, the programme coordinator and the head of studies. Furthermore, they are also involved in the Students Council of the faculty.

- **Orientation and accompaniment to the student**
  In each UdL center, a coordinator of the UdL Acompanya - Nèstor Programme is appointed in charge of organizing the reception sessions of the center in coordination with the management and guiding and advising the students throughout their learning process.
  The plan designates the coordinator as the student's tutor, who works closely with the coordinator of the degree/master, since he represents a reference figure for the student and makes him or her a point of reference for any incident or need for guidance and accompaniment. Therefore, the degree/master coordinator also plays an important role in the orientation of the student, exercising the functions of advisor throughout the learning process and managing the suggestions and complaints of the students, and directing them towards the pertinent areas and services.
  On the other hand, in the mobility processes, the coordinator of international relations is in charge of informing and advising the students of the School interested in participating in a mobility programme and participating in their selection.

- **Incorporation of the inclusion coordinator of the center**
  The UdLxTothom Programme is part of the services that the UdL offers to the entire university community, students, administration and services staff, and teaching and research staff. It is attached to the Coordination of Social Commitment, Equality and Cooperation and is managed within the University Information and Guidance Unit. Its objective is to promote the participation and inclusion of people with functional

diversity, based on the principles of equal opportunities, inclusion and social responsibility.
The inclusion coordinator of the UdLxTothom programme of the center is responsible of responding to the adaptation and habilitation needs derived from situations of disability or specific educational needs of the student.

- **Student Associations; Student Council, IAESTE and LleidaHack.**
  The EPS Student Council is the body for consultation, deliberation, communication and representation of the students of the School, which is responsible for matters related to both academic life and university extension involving students. Its objectives are to ensure that the rights and duties of students are fulfilled as well as to promote their participation in all areas of university life and to promote that students receive quality academic and human information. In our faculty, this council is very active, and they have periodic meetings with the faculty management team to coordinate, discuss and suggest improvement actions.

  IAESTE is an international student association, with a very active local committee at the University of Lleida, which aims to provide students who are pursuing scientific and technical careers with the possibility of doing internships in foreign companies and institutions during their training at the University.

  LleidaHack is an association mainly conformed by students and alumni of the faculty, whose goal is to foster passion for technology. They organize different activites such as the HackEPS programming competition, the TechMeetings where they invite experts to present some novel ICT topics in a very informal environment, they organize some workshops, talks to secondary and high schools, or they even participate in the Technovation programme by mentorizing young girls interested in ICT.

- **Dolors Piera Center for the equal oportunities and promotion of women**. The main goals of this center are promoting equality policies among men and women as well as motivate the inclusion of the gender perspective in teaching, research and management In particular, they have developed a protocol to prevent and attend situations of gender-based violence and sexual harassment, addressed to students, PAS and PDI. They have an office which is very visible and accessible for students, located in the classrooms building of the campus.

Since the last accreditation, the EPS has continued to incorporate improvements in the learning support systems, among which the following are specifically devoted to foster the orientation and labor insertion of students:

- **Job placement fair UdL-Treball**
  UdL-Treball is a one-day-long yearly organized fair, aimed to bring together companies and students. For students, UdLTreball is the way to know first hand the job opportunities in the territory, receive specific guidance on employability and learn, through the activities that are scheduled, the best way to promote and improve their professional skills. Likewise, for the company, UdLTreball is the way to make themselves known and show themselves as a real option for a professional future, as

well as to have direct contact with the options of joint work and continuous training offered by the University of Lleida.

- **Implementation of Dual Training**: The course 15/16 started the Dual Training in the Master of Computer Engineering, and the course 16/17 in the Master of Industrial Engineering whose operation was regulated through a specific procedure (2_4_01_PC008). Dual training allows students to work in the company in the morning, with an employment contract, and attend the university in the afternoon; with an academic recognition of the tasks, skills and competencies developed in the company, becoming an essential tool to insert master's students in the labor market. The School has developed a Methodological Framework for Dual Training to include all the processes related to this methodology, therefore attending to a recommendation from the 2019 External Evaluation Committee (master's degree accreditation).

- **Increase in the number of Industrial doctorates**: EPS has actively participated in the Industrial Doctorate Programme (http://www.doctorat.udl.cat/es/mencions/doctorat-industrial-00001/) promoted by the Generalitat of Catalonia and whose objective is to contribute to the competitiveness and internationalization of the industry, reinforce the instruments to attract talent and place future doctors in a position to develop R&D& I projects in a company. Industrial doctors act, as well as knowledge transfer bridges, and contribute to strengthening relations between the industrial fabric and universities and research centers. EPS has not been left out of this great opportunity and has participated in this programme since its inception. To date, two industrial doctoral theses have been already finished (at the Scytl, Ilerfred and Sallen companies) and another three are being developed (two at Lleida.net and one at PMP).

- **Incorporation of professionals from reference companies in the evaluation courts** of the projects in the Learning by doing subjects of the Master's Degree in Computer Engineering. Their participation in these commitees is very valuable for students, since they have to present their projects and can receive a face-to-face assesment focused on professional and real company point of view.

- **Promote contact and relationship of students with professional associations:** Professional associations and business associations collaborate closely with the School in different aspects:
    - **Awarding of prizes and mentions to the best academic records**. These awards are awarded annually within the framework of the Alumni dinner (http://www.alumnieps.udl.cat/ca/).
    - **Awarding of prizes and mentions to the best TFG / TFM**. These awards allow schools to know first-hand the lines of work in the final degree projects (http://www.eps.udl.cat/ca/info_sobre/concursos_premis/). At the same time, it is a good motivation for students to do innovative TFG / TFM.
    - **Talks organized by professional associations.** These talks are mainly oriented to the final year students, in which they present the challenges and possibilities that the labor market will offer them. In turn, they offer students one year of free tuition, which can accompany them in their professional initiation (http://www.eps.udl.cat/ca/agenda/Xerrada-Sr.-Eduard-Martin-Dega-COEINF.-

La-professio-denginyer-informatic-estudis-i-carrera-professional-00001).

- **Autodesk Agreement**: In academic year 17/18, the collaboration agreement was signed between the UdL and the Autodesk company through which, among many other advantages, the educational community has free access to the applications of this company, in academic version, among which the following stand out. of building and architecture, such as AutoCAD and Revit, in addition to being able to issue official certificates of the level reached by students during the career, a fact that allows not only to improve the knowledge of these programs but also to be able to justify their level in the work curriculum (http://www.eps.udl.cat/ca/noticies/La-UdL-esdeve-Autodesk-Authorized-Academic-Partner/).

- **Increase in international internships "mobility internships"**: The School supports, empowers and motivates students to participate in the Erasmus-Internship program where they are the ones who have to look for the European company where they can carry out the internships. This encourages students to face a new situation in their training, such as having to prepare a CV, a cover letter, and begin to "train" their jump to the labor market, since the situation is very similar to that of having to look for work for the first time. Another option for international internships is through the IAESTE (International Association for the Exchange of Students for Technical Experience) student association, present in more than 80 countries, has a very active local committee in our university. Students interested in international internship join the association in they first or second year, so they can apply for an internship on their third or fourth year, or even during their master programme.

- **Implementation of EPS PRO-GATEWAY programme**
  The EPS PROfessional Gateway programme consists of a series of activities that aim to provide professional guidance for students. This programme is conformed of:
  - Orientation talks from professional associations
  - Orientation talks and tutorization offered by the coordinators of the degrees
  - EPS company corner: it is a space, physical and temporary, where companies and students can meet and get to know each other, with the main objective that companies present themselves and inform our students of job opportunities, of the possibilities of doing the TFG / TFM, Practices, the possibility of Dual Training, when appropriate. They are usually organitzed on Tuesday and Wednesday. Each session is devoted to a single company, which is alocated at the lobby of the faculty so interaction with students is casual and informal. However, due to the necessary prensentiality of this action, it has been interrupted by the pandemic and it is planned to being restarted on 2021/2022
  - Speed dating: it is a dynamic Networking activity that consists of conducting quick and concise interviews between students who finish the Degree or Master and the companies in the area of influence. This format favors close and individual contact, exchange and proximity when it comes to meeting the ideal candidate or company. Some activities have been canceled or reduced as a result of the pandemic, and it is expected that they will resume and intensify as soon as the health situation allows it again.

- **Complementary activities**
  Along the whole academic year, there are several activities which are organized together with companies, whose goal is to promote a close contact with the latest projects and technologies used in the professional sector.

  - Hackathon: (https://lleidahack.github.io/hackeps2018/) This activity is promoted by the School and organized by students of the School under the supervision of a teacher. It is a programming tournament in which a group of companies (sponsors) propose a programming challenge or project. Participating students must solve one or more of these challenges. The solutions are evaluated by an expert committee made up of university professors and company experts. The best solution is awarded by the company or sponsor that launches the challenge. This is an activity designed to motivate students to solve real programming problems and learn programming technologies, techniques and methodologies, but also to bring companies closer to the university environment and make the companies known among students and encourage their contact. What makes this activity essential to enhance the interaction of the school and students with the surrounding companies and promote participation in joint activities of knowledge transfer, creation of projects, etc.
  - Summer course of the company GFT on Mainframe technology developed in the EPS facilities that also served to make a selection of personnel for this company (http://www.eps.udl.cat/ca/noticies/LEPS-i-GFT-ofereixen-aquest-estiu-un-curs-gratuit-en-tecnologia-Mainframe/).
  - Course at the UdL Summer University offered by the Starloop company in collaboration with the EPS on video game technology (http://www.eps.udl.cat/ca/noticies/Inici-a-lEPS-del-Curs-de-videojocs-per-a-la-inclusio-adrecat-a-joves-vulnerables-en-situacio- de-risc-social /).
  - Visits to reference companies such as GFT, Minsait, EURECAT, BonArea, Alter Software, STRATESYS, Alier, San Miguel-Mahou, Romero-Polo, Subcoele, etc… have continued to be visited with the aim of guiding students in their transition to the professional world.
  - Incorporation of professionals from leading companies and representatives of professional associations in specific talks in the field of EPS master subjects, such as Mr. Guillem Boira (Dean of the College of Industrial Engineers of Lleida), Mr. Josep Freixanet (GFT manager), Mr. Francesc Guitart from GFT, Mr. Aitor Corchero from the EURECAT technology center, Mr. Jordi Gervás from the Lleida Provincial Council, or Mr. Josep Clotet and Angel Ros from the Lleida Technology Park , to name a few.

3. Exams: System, Concept & Organisation

Criterion 3 System, concept and organisation

MASTER IN INDUSTRIAL ENGINEERING

Subjects compulsory and optional

The evaluation system for each subject is public and can be found in the teaching guides for each of the subjects through the degree website and also on the virtual campus. The evaluation system is governed by the EPS Academic Framework (http://www.eps.udl.cat/ca/informacio-academica/normatives/marc-academic-eps/) that is constantly evolving to respond to the needs of all subjects in the assessment methodologies to achieve learning results.

The assessment systems used in the master's subjects are diverse but given the practical nature of the master's content, most subjects use assessment systems based on practical and / or practical tests (in addition to written tests), guaranteeing continuous evaluation.

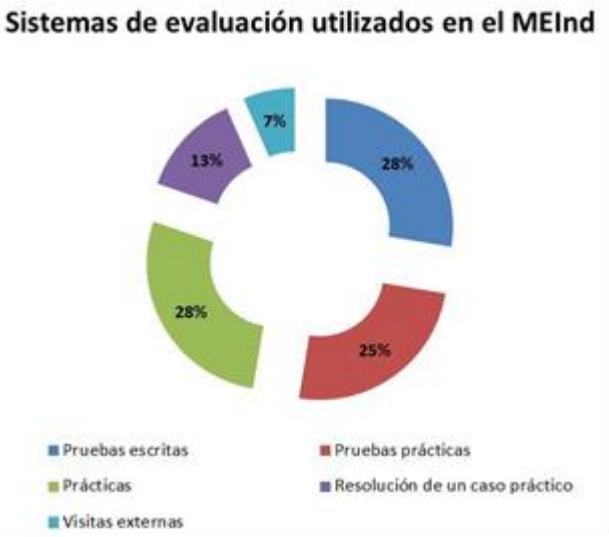


Figure 1. Evaluation systems used in the MEInd

It should be noted that a total of 91% of MEInd subjects use one or more methodologies: laboratory practices, use of specific software, or visits to companies. Of the three, the most widely used methodology is that of specific software, used in 74% of the subjects, while laboratory practices are used in 35% of the subjects and company visits in 30%.

Figure 2. Percentage of MEInd subjects that use as methodology: laboratory practices, specific software, visits to companies.

All these evaluation activities and teaching methodologies have been favored and strengthened by the policy and the effort to increase and improve laboratory equipment and software carried out by the EPS in recent years.

From the evidence on the achievements exposed in the degree portfolio, (Criterion 3 \ MEInd \), it can be observed that the evaluation criteria are explicit, appropriate to the nature of the executions and allow to discriminate the quality of learning.

On the other hand, the teaching methodologies are varied and appropriate to the content and skills to be acquired in the master's degree. It should be noted that, although these methodologies already are used intensively in undergraduate studies, it is a differentiating feature of the master's competences that the student acquires and masters communication skills, leadership, direction and project management, etc. In order for the student to correctly acquire the skills of the degree and that the scope of work and the contents of the subjects adjust, as much as possible, to what the student will find in the world of work, the teaching staff has adopted new teaching methodologies such as Problem Based Learning, Project Based Learning or Flipped Learning to encourage entrepreneurship and students' communication skills. These methodologies not only place the student at the center of the learning process, rather, through continuous monitoring and evaluation activities, they make the student aware of their progress and the main protagonist of the learning process. The incorporation of these teaching methodologies has also implied an adaptation of the evaluation methodologies.

Master's Final Project

As for the TFM, it is evaluated following a continuous evaluation methodology where four well-differentiated sections are evaluated: Initial report, follow-up report, final document and presentation. This procedure guarantees tailor-made evaluation and monitoring mechanisms for each of the phases and the certification of the learning results throughout the process of preparing the Final Master's Project.

Tutored Internships in Company

The Master in Industrial Engineering does not contemplate in its study plan Tutored Practices

in Business (PTE). However, it does include a Dual Training modality, much more ambitious than the PTE.

MASTER IN COMPUTER ENGINEERING

Subjects compulsory and optional
The evaluation system for each subject is public and can be found in the teaching guides for each of the subjects through the degree website and also on the virtual campus.

The evaluation systems used in the master's subjects are diverse but given the practical nature of the master's content, most subjects use a learning methodology based on problems and teamwork and a continuous evaluation system. A smaller set of subjects has opted for more innovative methodologies such as project-based learning and Learning-by-doing that, by simulating a real context, aim for the student to learn through experience, making mistakes and sharing ideas.

It should be noted that, although some of these methodologies are already used in undergraduate studies, it is a differentiating feature of the master's competencies and a demand from companies that the student acquire and master communication, leadership, direction and management skills. projects, etc. In order for the student to acquire in a natural way and consolidate both basic and transversal competences, the master's degree teachers have made a great effort to implement new methodologies such as Learning-by-doing, Coaching techniques, Entrepreneurship models as "Elevator Pitch", etc., which not only allow a differentiating approach to learning, but also foster the entrepreneurial and communication skills of our students. These methodologies not only place the student at the center of the learning process, but through continuous monitoring and evaluation activities make the student aware of their progress, manage their own time, and be the main protagonist of the learning process. The incorporation of these teaching methodologies has implied an adjustment of the evaluation methodologies and great efforts in coordination. The evaluation is carried out continuously by the different teachers and in a transversal way to all the competences, but there are also follow-up meetings and joint final presentations, where all the teachers share their evaluations generating a global and consensual evaluation.

The results of the surveys and the students' evaluations are data that each academic year are reviewed by the coordination to detect possible anomalous situations and propose corrective actions.

Tutored Internships in Company
Regarding the Tutored Practices in the Company, the coordinator of the PTE of the degree carries out the follow-up in communication with the company tutor, which allows any dysfunctions that may arise to be solved quickly. The evaluation of the PTE is carried out from four elements:

- Practice notebook (report) to be delivered by students and monitoring carried out by the academic tutor of the PTE of the degree.
- Evaluation carried out by the company tutor.
- Presentation of the work carried out in court.

- Self-evaluation carried out by the student.

The learning PTE evaluation model takes into account the vision of the three agents involved: students, companies and teachers, and allows certifying the achievement of learning results based on the competencies established in the Certificate Verification Report. The way in which Tutored Internships are coordinated in the Company and how they favor the employment orientation of students has been explained in the development of criterion 2.4 of this report.

Master's Final Project

As for the TFM, it will be evaluated following a continuous evaluation methodology where four well-differentiated sections are evaluated: Initial report, follow-up report, final document and presentation. This procedure guarantees tailor-made evaluation and monitoring mechanisms for each of the phases and the certification of the learning results throughout the process of preparing the Final Master's Project.

Improvements and good practices

Review and improvement of the evaluation system in subjects with the Learning-by-doing methodology

The implementation of new teaching methodologies also implies the continuous review of the monitoring and learning process of the students. In these subjects, the learning objectives must be clearly defined and assessment measures established both at the group and individual level and consider criteria that consider not only the quality of the final product but also the learning process of each of the students. The evaluation process for these methodologies are an open question that must be continually reviewed and improved and must be accompanied by the training and involvement of teachers. In order to address this aspect, various actions have been carried out:

- Training activities have been carried out for teachers to discuss and review the evaluation processes.
- Regular meetings have been held at the beginning of each course in order to define the strategy for creating working groups, the follow-up procedure, the documentary productions that will be required, as well as the criteria and the evaluation calendar.
- Regular meetings have been held at the end of each course in order to exchange views on academic results, student satisfaction, teacher satisfaction with the procedure, and register improvement proposals for the following academic year.
- It has been established that the monitoring and evaluation activities in the different phases of the project: SPRINTS and final presentation of the project, are carried out by several teachers and not individually. Both TC teachers and professionals participate in these sessions. In the final evaluation of the project, managers of ICT companies with a very good relationship and involvement with the program sometimes participate.
- It should be said that these meetings are held with practically all the teaching staff involved in the subjects dedicated to the development of a real entrepreneurship project using the Learning-by-doing methodology, at least 7 teachers and the coordinator of the master's degree.
- Promotion of coordination activities between teachers and subjects.
- Promotion of Coaching activities. These activities at the beginning of the course are

useful for teachers to know the emotional profile, interaction and communication of the students and during the course they allow to detect possible individual and group conflicts and address their solution.

Promotion of coordination activities

Intensive work has been done to promote coordination activities between subjects. For this, actions have been carried out such as:

- Create a time table where the subjects working on the development of a real project share a time slot. In this way, the schedule does not mark the content, but rather the space where the project will be developed at the pace set by the project and the different follow-up activities. The contents arise as they are needed and where the most appropriate teachers intervene in each phase and jointly in the monitoring and evaluation activities.
- Define groups of subjects that are coordinated with each other in order to enhance the transversality of knowledge, provide a common thread to the contents which are applied to the resolution of larger, more enriching projects. As an example of groups of subjects that work together we have:
    - Project 1: Development PPP for entrepreneurship
        - IT Project management ..... (1C1S)
        - ICT Project: Development and Implementation..... (1C1S)
        - Evaluation Techniques and Usability Testing..... (1C2S)
        - Technological Business Management and Entrepreneurship ..... (1C2S)
    - Project 2: Development of a graphic project
        - Computer Graphics and Multimedia ..... (1C1S)
        - Intelligent Systems ..... (1C1S)
        - Embedded and ubiquitous systems ..... (1C1S)
    - Project 3: Big Data Project
        - Massive Data processing ..... (1C2S)
        - Data Mining ..... (2C1S)
        - Big Data Project ..... (2C1S)
- Periodic teacher coordination meetings are promoted at the level of each project.

Dual training

The dual training modality in university studies is an innovative aspect. There is no common methodology, it does not have a generalized implementation and there is no regulation, regulation, or labor framework that regulates this figure at the level of university studies. Similarly, there are also many application and evaluation models. The main objective of dual training is for the student to acquire skills in a real work environment.

This methodology was implemented in the MEInf during the 15/16 academic year and in the MEInd during the 16/17 academic year.

The dual-mode student alternates professional experience and studies, attending part-time at the company and the other part-time at university classes, during the school period. During the non-school period the student is full-time in the company.

In the specific case of the MEIND, the result of the evaluation of the experience acquired in the company is transferred to a block of four subjects, three equal subjects for all companies (the optional block called Business Projects, and the subject Project Management and Human Resources), and a subject that depends on the technological profile of each company (to date Industrial Organization II, Design and Testing of Machines I, Industrial Construction I and Basic Operations of Chemical Processes have been offered).

In the specific case of the MEINF, the result of the evaluation of the experience acquired in the company is transferred to a block of four subjects, three subjects belonging to the specialty called Enterprise Integrated Projects and one subject from the optional training module called Trending Topics in Computer Science. In this way, the student in dual training, takes exactly the same compulsory subjects of the study plan as a regular student and training in the company is recognized as a specialty with a mention in the degree.

The activities that the student will develop, and the skills that will be worked on and evaluated are defined in advance in what we call the training project. The training project is also specified in a monitoring and evaluation notebook that we call the learning notebook. The learning notebook specifies the data of the people who participate in the process: the student (E), the company tutor (TE) and the university tutor (TU). The notebook also specifies the calendar of meetings, at least two per semester face-to-face, during the duration of the master's degree. The notebook is shared with the three actors: Student, company tutor and university tutor. In the first meeting of each semester, the activities and competencies to be evaluated are established. What's more, the student must include information about their experience in terms of integration in the company and their experience in terms of learning in it. In the second meeting, the TE evaluates the achievement of the activities, the degree of acquisition of the competences as well as a set of transversal skills and / or competences. The TE can also comment on student strengths and progress points for subsequent assessments. Based on the TE's comments, the student writes down his own assessment of the process and the evaluation received in the notebook. This is repeated for four semesters, in the case of the MEInd and for 3 semesters, in the case of the MEInf. In addition, for each semester the student generates an activity report. In this report the student describes all the activities carried out, the purpose of the same, the time of dedication, the technologies used and most importantly, the skills worked and the experience acquired are valued. This memory is essential to proceed with the evaluation. The reports of activities of each semester together with the learning notebook form the set of evidences for the evaluation of the subjects of the dual modality block.

The evaluations that the student receives, as well as the comments, the reports, the meeting calendar, etc., and any additional information that the learning process may generate is always shared by the three participants, so that everyone knows the status of the evaluation process and the student is aware at all times of the evolution of their learning process.

The process that has been described provides us, on the one hand, with a tool that allows us to convey the student's monitoring and learning process, as well as certify the learning results. On the other hand, the method of selecting tutors from both the university and the company guarantees the quality of the activities and the learning process, as well as compliance with the qualification profile.

Academic indicators values

MASTER IN INDUSTRIAL ENGINEERING

MU in Industrial Engineering	2016-17	2017-18	2018-19	2019-20
Rate of return	91.8%	91.9%	86.9%	89.3%
Efficiency rate	99.5%	98.8%	96.7%	95.6%
Average graduation time	2.1	2.4	2.8	2.2

Average graduation time:
The average time of graduation in the 19/20 course is 2.2 years (taking into account that the MEInd lasts 2 years). This indicator presents stable and satisfactory values during the analyzed period, since in academic year 16/17 it was 2.1 years and in academic year 17/18 it was 2.4 years. The variation that exists between courses is very insignificant and is largely due to the fact that students may choose to extend the TFM for a few months longer than expected, especially if they start working during the last semester.

Efficiency rate (minimum credits / enrolled credits):
The efficiency rate remains at values between 95.6% and 99.5%. This rate is higher than both the average for the UdL and the EPS. It also highlights that there is no significant difference in the efficiency rate between "full-time" students and "part-time" students, thanks to a good organization to be able to continue their studies in either of the two modalities.

Rate of return (credits approved / credits enrolled):
The rate of return is high: from 91.8% in academic year 17/18 to 89.3% in academic year 19/20. This fact is explained by the interest that students have in taking the Master and completing their training, by the good dedication of the teaching staff and by the possibility of working with groups of adequate size, achieving individualized monitoring of the learning process. This translates into an easier time getting all students to keep up with the course successfully.
In this sense, it is worth highlighting the efforts made both by the teaching staff and by the coordination and the Center to maintain these values with the deployment and continuous improvement of the degree. This great stability in very satisfactory and excellent values is due to the continuous improvement actions that are carried out to correct possible imbalances in the implementation of the degree.

MU in Industrial Engineering. Cohort.	Graduation rate in expected time (t and t + 1)	Dropout rate at t + 1
2014-15	41.7%	25,%
2015-16	91.3%	4.3%
2016-17	55.6%	33.3%

2017-18	66.7%	25,%

Graduation rate in the expected time (t + 1):
The 2016/17 cohort had a graduation rate of 55.6%, somewhat higher than the 2014/15 cohort (41.7%). On the other hand, the 2015/16 cohort shows much higher values (91.3%). This is due to the fact that in cohorts 17/18, 16/17 and 14/15 there was a much higher percentage of part-time students than in cohort 15/16. The implementation of Dual Training aims to respond (among other things) to this situation, by facilitating a training plan in which professional experience is gained, but with an itinerary and dedication that allow the full-time master to be completed.

Drop out rate:
The dropout rate stands at 25% for the 2017/18 cohort. This fact is due, as with the graduation rate, to the higher percentage of part-time students in these cohorts. On the other hand, in the 2015/16 cohort (where there are no part-time students) the dropout rate stands at 4.3%. As mentioned in the graduation rate, the implementation of Dual Training aims to respond (among other things) to this situation.

Regarding the gender perspective, the rate of return is 10% higher in the case of women than that of men, constantly during the last years, as is the rate of efficiency, which is also 5% higher in the case of women compared to men.

Improvements and good practices

- **Implementation of Dual Training.**

Due to the significant number of part-time students (since they work) and the higher dropout rates of these, the introduction of a Master in Dual Training modality is proposed. The main objective of dual training is for the student to acquire certain skills in a real work environment. In this way the student learns based on real cases, and at the same time gains professional experience. This modality includes an employment contract for students, who work part-time in the company during the school period, and full-time during the non-school period.
In this way, the need / desire of students to gain experience while taking the MEInd is resolved in a more orderly way and without losing sight of the fact that their priority is the Master. This modality has helped to drastically reduce part-time students for work reasons, as well as to improve dropout rates (although the evolution of this rate must be analyzed over a longer period to determine if it stabilizes).
Finally, the opinions collected during the last years from the students of the Dual Training program indicate that the assessment of the Dual Training modality is very positive.

- **Realization of a map of practices.**

From all the agents participating in the MEInd (management, coordination, teachers, students, etc.) a constant effort is carried out to identify possible future imbalances in order to implement improvements to avoid them before they happen. In this case, the realization of an internship map of the degree stands out, which aims to analyze the level of workload of the students during the course to avoid load peaks due to coincidence in the time of a

large number of practices and exams. With this measure, possible future problems of excess load are prevented at specific times, a fact that improves the ability of students to manage their time to dedicate it to achieving learning results.

MASTER IN COMPUTER ENGINEERING

MU in Computer Engineering. Cohort. 2	Graduation rate in expected time (ti t + 1)	Dropout rate at t + 1	Dropout rate in first year
2014-15	28.6%	28.6%	21.4%
2015-16	70,%	20,%	15,%
2016-17	87.5%	12.5%	,%
2017-18	80,%	,%	,%

The figure above shows the graduation and dropout results. In the period covered by the course the graduation rate decreases. The causes are the increase in the drop-out rate and the delay in the graduation of students. Enrollment for this cohort was large due to the interest of students from degrees to be extinguished by obtaining a degree in the EHEA. However, most of them combined their studies with a full-time job. If we take into account the experimental nature of the degree, with great practical content using technologies that are continually renewed, these are factors that make it difficult to follow up the studies.

The main objective of the changes introduced in the curriculum applied for the 15/16 academic year are to make a more attractive and higher quality curriculum, which includes specific actions to reverse the negative results of the previous period, such as:

- Tuition tutoring.
- Continuous monitoring of students, especially of students with more than two years in the master's degree.
- Contact with students who have dropped out to follow up and encourage them to resume their studies.

The direct results of these actions can be observed in the same table where it is reflected how the graduation rate rises rapidly to values of 70%, 87.5% and 80% in the 15/16, 16/17 and 17/18 courses, and the dropout rate progressively falls. There is no data for the following courses because the students are within the usual period of duration of their studies.

In the same table, it is also observed that dropout in the first-year decreases, which means that students feel accompanied and more motivated to continue their studies.

MU in Computer Engineering	2016-17	2017-18	2018-19	2019-20
Rate of return	90.4%	96.7%	89.4%	95.6%
Efficiency rate	98.5%	92.1%	97.6%	96.8%

Average graduation time	2.4	2.7	2.9	2.4

Regarding the rate of return, it is observed in the table above that it maintains an upward trend during courses 16/17 and 17/18, standing at 95.6% in the last course evaluated. The efficiency rate indicates the number of credits enrolled by graduate students with respect to the credits of the study plan. As can be seen in said table, this rate remains at 93% on average during the evaluated period. These results show the success of the enrollment tutoring and monitoring actions implemented, which allow adapting the workload to the needs and possibilities of each student, obtaining as a result that practically all the enrolled credits are passed.

Regarding the average duration of studies, the minimum time for graduation is a year and a half and the maximum time according to the regulations of permanence is double for students at TC and triple for students at TP. Most TC students complete their studies in approximately two years. This is so because they usually spend the second semester of the second year to finish the final Master's Thesis, thus distributing the workload of the second year. Students in the dual training modality who wish to do so are offered the option of dividing their first-year enrollment into two courses and taking the TFM in a third. This allows them to spread the workload, helps them in the process of joining the company without affecting their academic performance, and allows them to adapt the pace to their own needs, completing studies in two or three years. There is also a large number of students who, without taking the dual-modality master's degree, combine their studies with work in the company and complete a partial enrollment. Bearing this in mind, the average duration of studies is between 2.5 and 3 years on average during the evaluation period, an indicator that perfectly adjusts to the profile of the students.

The results obtained show not only the quality of the teaching exercise, which with new methodologies provide the student with: motivation, quality knowledge and added value; but also the application of a set of good practices in terms of tuition tutoring, student monitoring, the application of new methodologies focused on the student and their learning process, etc. This has allowed obtaining more than satisfactory results that demonstrate the degree's commitment to continuous improvement.

Improvements and good practices

- **Intensification of student recruitment tasks**
  The tasks of attracting students, especially the Degree in Computer Engineering, but also former students and foreign students, have been intensified, with the ultimate aim of providing the master with a stable source of student entry.
  To this end, some of the actions carried out are:
  - Intensification of the promotion of the master's degree:
    - Specific activities for GEI students at the UdL: presentation of projects by the MEInf student, talks by the College of Computer Engineers, company talks promoting higher degrees, etc.
    - Attendance at national and international fairs.
  - Double International degree with the University of FACENS, which has to facilitate the access of these international graduates to the master's degree.
  - Intensify the promotion of Dual training:

- Promotion for undergraduate students: presentation of projects in dual training, company talk, etc.
- Recruitment of new companies that offer positions in dual training.
- Promotion of dual training among ICT workers without higher training.

- **Intensification of the tutorial action**
  The main objective of this action is to work for the continuous improvement of student satisfaction and avoid abandonment. Most of the students combine their master's studies with work in the company. Some of them through dual training, but there are students who are working and do not do the master in dual mode because they want to study the specialty of Big Data. There are students working through or without dual training and who choose to enroll full time. There have been situations of foreign students who want to access the master's degree with a previous or ongoing master's degree. Sometimes this is so because they see dual training as a way to join a company without having the ultimate goal of completing the master's degree.

  With this highly varied profile of students, tutorial action is very important. It is about identifying the reasons why a student wants to do the master's degree, identifying their availability, and reviewing their file as much as possible in order to identify their efficiency and performance rate. This can give us information to help us tailor the workload to each individual student and avoid dropping out. This action translates into meetings of the coordinator with the students before enrollment and during the course of the master's degree.

- **Realization of a map of practices**
  From all the agents participating in the MEInf (management, coordination, teachers, students, etc.), a constant effort is carried out to identify possible future imbalances in order to implement improvements to avoid them before they happen. In this case, it is worth highlighting the realization of an internship map of the degree, which aims to analyze the level of workload of the students during the course to avoid load peaks due to coincidence in time of a large number of internships and exams. With this measure, possible future problems of excess load are prevented at specific times, a fact that improves the ability of students to manage their time to dedicate it to achieving learning results.

Values of the labor insertion indicators

The analysis of labor insertion indicators is carried out based on the study of "2020 The labor insertion of Graduates and Master's degree holders from Catalan Universities" of the Agència de Qualitat del Sistema Universitari (AQU)[1]. This study does not segregate the data by Universities, so it is difficult to carry out a comparative analysis. The data discussed below refer to the Industrial Technologies sub-area in an aggregate way for all Catalan universities.

According to this study, the Industrial Technologies area, which includes the Master in Industrial Engineering, has an occupancy level of 95%, being higher than the average for areas and increasing with respect to the values of the 2017 study. ICT, where the Master in Computer Engineering is included, decreases slightly below 95%, a value obtained in the previous survey.

The adequacy of functions with the studies carried out in the specific sub-area of industrial technologies exceeds 60%, being higher than the average for areas and ranking among the top 5. These results place industrial engineering as one of the sub-areas with the best relationship between employability and adequacy of work with the studies carried out. It is followed by the ICT area, occupying the sixth position with a similar value, although it presents a slight decrease in relation to the 2017 study.

Regarding the types of contracts, the field of Engineering stands with 67.2% as the field with the highest index of permanent contracts by far. In terms of remuneration, the field of engineering is once again in the first place, with an average salary of € 2,673.

The specific field of Engineering has the highest percentage of graduates with responsibilities over other people. Likewise, this area obtains the best evaluation in the Occupational Quality Index (ICO), with an average value of 70.3. This indicator reflects not only the high employability but also the quality of employment, types of contract and remuneration.

On the other hand, in order to have indicative data for comparison between universities, the data obtained in the insertion study for 2020 graduates (https://estudis.aqu.cat/dades/Web/Inici) allow some conclusions to be drawn to place the University of Lleida with respect to the rest of the universities, although the values are also included in the Engineering area.

In general, the results are similar between Catalan universities, saving some differences that are usually a consequence of the socio-economic environment of each one of them. Regarding the occupancy rate for graduates in master's studies, it is observed that it is very high (93.8%) above the average of the rest of the participating universities and 80% of the graduates carry out specific functions related to their training.

It should also be noted that 57% of the graduates at the UdL have salaries of more than € 2,000 and 93.5% work full-time. 69.5% are hired by private companies while 30.5% are by public enterprises.

Regarding satisfaction with their studies, 78.1% would repeat their master and 93.8% would do it again at the UdL, values well above the average of Catalan universities that stand at 68.6% and 89.5%, respectively.

These data show that the socio-economic environment, the size of the city and the university facilitate contact networks. This is especially interesting since the contact of the teaching staff of the degree with the companies favors the immediate access of the students to the job offers, but also the contact of the School with the companies is fluid and close, fostering a continuous flow of job offers to through the services of the UdL.

Improvements and good practices

- **Promotion of companies, projects and offers**

Many companies consider that students do not know the company, the type of projects that students can develop in them, the profiles requested and the possibilities that they can offer them. That is why companies demand mechanisms to make themselves visible to students. In this sense, various actions are carried out by the EPS:

- Encourage the participation of companies in the job fair of the UdL Fira UdL treball. This fair is promoted by the University and is a meeting point between companies and students, where there are also several conferences or workshops held by companies, human resources professionals, staff from the UdL job bank, etc.
- *EPS Professional Gateway*. The main objective of this program of the School is to prepare the student for his labor insertion in companies of the area of influence of the UdL that require professionals of the field of engineering. In each session an activity is planned that allows the student to acquire a holistic vision of the job placement process, contact companies and learn about their future project.
- Promotion of joint School-Company activities in the field of ICT:
    - *Hackathon* programming where different companies and the School itself launch different challenges and students compete for the best solution (https://www.udl.cat/ca/serveis/oficina/agenda/Hackathon-de-lEPS-HackEPS-2020/). The companies participate in the evaluations and sponsor the event and the student awards. This activity is open even to students from other universities. It is worth noting that this activity is completely organized by the students themselves, both undergraduate and master's degrees, and they are in charge of establishing contacts with companies, as well as organizational details.
    - Summer courses taught at the School by highly qualified professionals who work for the companies. For instance:
        - Mainframe programming
        - Video Game Programming
        - Programming in ERP environments

- **Improving the job placement of graduates**

The job placement of our graduates is the ultimate goal of the entire learning process. For this, various actions are carried out such as:

- *Implementation of Dual Training.*The main objective of dual training is for the student to acquire certain skills in a real work environment. In this way the student learns based on real cases and gains professional experience. This modality includes an employment contract for students, who work part-time in the company during the school period and full-time during the non-school period. In this way, the need for students to gain experience and enter the world of work while they are studying one of the master's degrees is resolved.
- The participation of students in Fira UdL treball is promoted.
- The Industrial Doctorate program is promoted among ICT companies with an interest in MEInf graduates.

4. Resources

Criterion 4.1 Staff

The different positions for teaching staff (PDI) [Uc18][Uc19]in the Spanish university system are classified according to being full or part time, and permanent or non-permanent, as follows:

- Full time
    - Permanent:
        - Professor / Contracted Profesor (PhD)
        - Senior Lecturer (PhD), (also denoted as TU or Agregate)
        - University School Senior Lecturer (also denoted as TEU)
        - Permanent Collaborating Lecturer (also denoted as Collaborator)
    - Non-permanent:
        - Assistant Lecturer (PhD).
        - Postdoc positions or visiting positions (PhD)
- Part time non-permanent:
    - Adjunct lecturer: they are external professionals from companies
    - Predoctoral grantholder: PhD students are requested to give some few lectures on their area of study

During the last years the University has made an effort to facilitate promotion to higher positions. In the case of the School, the following table shows the calls made since 2018:

	Year				
Position	**2018**	**2019**	**2020**	**2021**	**Total**
Agregate		8	2	2	12
Professor		6	4	1	11
Assistant Lecturer	1	3	9	1	14
Total	**1**	**17**	**15**	**4**	**37**

This positions are related to the department and the area of knowledge that are detailed below:

Departament / Area of Knowledge	**Calls**
Business Administration	**1**
Business Organization	1
Agroforestry Engineering	**1**
Agroforestry Engineering	1
Informatics and Industrial Engineering	**25**

Departament / Area of Knowledge	**Calls**
Computer Architecture and Technology	3
Computer Science and Artificial Intelligence	5
Architectural Constructions	2
Chemical Engineering	4
Languages and Computer Systems	5
Thermal Machines and Engines	3
Electronic Technology	3
Mathematics	**6**
Applied Mathematics	6
Environment and Soil Sciences	**4**
Applied Physic	3
Applied Physics (Profile: Renewable Energies)	1
Total	**37**

In the case of Assistant Lecturers, they have 5 years to upgrade to Senior Lecturer. In order to apply for a promotion, candidates must pass an external avaluation held by the government, and then pass a selective and competitive process which is open to any candidate accomplishing the conditions.

Along their professional career, permanent teaching staff is submitted to periodic evaluations:

- Research track (Sexenio/tramo de investigación)
    - Every six years the teaching staff submits a report of the research activity he or she has done over that period: publications, conferences, projects etc. The report is assessed by a committee. If the amount and quality of activity is regarded as sufficient, that period is approved or recognised, and the person gets a salary increase.
    - The concept "live/active research track" is used to denote that a teacher has passed all the possible research tracks at a given moment. Having an active research track is important, since it leads to a decrement on the teaching hours assigned.
- Teaching track (Quinquenio de docencia)
    - Similarly, every five years the teaching activity is assessed, taking into account the completion of the guides of the subjects, teaching coordination, teaching and assesment methodologies, innovative teaching projects, teaching related publications, opinion from students and performance results. Each teacher has to present a self-report detailing and analysing his teaching, and suggesting improvement actions, which is completed with the data that the universitiy collects. If this teaching track is approved, the person gets a salary increase.

MASTER IN INDUSTRIAL ENGINEERING

The profile of the teaching staff of the Master in Industrial Engineering aims to establish a certain balance between academic staff and external expert staff and adjunct lecturers who have more direct contact with the most innovative technologies used in the industry. For this reason, 18.5% of the teaching hours are taught by adjunct lecturers or external personnel and the rest of the hours, 81.5% by teaching and research personnel. For this reason, the profile of the teaching staff is considered to be very appropriate to the characteristics of the degree to be taught.

Among the 34 teachers in the master's degree, 23 are doctors (70% of them). By type, of the 22 full-time permanent staff, 21 are doctors, as well as 1 assistant lecturer (in the process of consolidation). Adjunct lecturers and external expert staff, 11 in total, are mostly professionals who provide the vision of technology and the labor market in different subjects.

Regarding the qualification of said teaching staff, both in teaching aspects and in research aspects, it should be noted that 60% of the teachers involved in the master's degree have been assigned with teaching tracks, as well as 45% of the PDI that teaches have active research tracks.

The students' assessments reflects an evaluation of this teaching profile. In the latest available results (2019-20 academic year) the degree of satisfaction with the teaching staff, satisfaction with the TFM and overall satisfaction with the master had an assessment of 4.3 (out of 5).

MASTER IN COMPUTER ENGINEERING

The profile of the teaching staff of the Master in Computer Engineering is considered very appropriate to the characteristics of the degree to be taught. Among the 33 teaching staff in the master's degree, 21 are doctors (63% of them). By type, of the 18 full-time permanent teachers, 16 are PhDs, as well as 4 assistant lecturers (in the process of consolidation). Among adjunct lecturers, mostly expert professionals who provide market insight in different subjects, 1 of the 11 is a doctor. This percentage increases if we consider the number of teaching hours, sincet 75% of the teaching is given by PhD teaching staff.

As can be seen from the absolute numbers of teachers, the ratio of teachers per student is high, with a level of personal attention to students that is reflected in their assessment, 4.7 out of 5.

Regarding the qualification of said teaching staff, both in teaching and research aspects, it should be noted that 66% of the teachers have active teaching tracks while 58% of the PDI that teach have active research tracks.

Regarding teaching assignments to subjects, it should be noted that, only on rare occasions, a significant percentage (greater than 50%) of a subject is assigned to non-doctoral lecturers. This exeptional assignment is given only in subjects where these external adjunct lecturers contribute significantly witg their professional experience, as for example, in the subject of TECHNOLOGICAL BUSINESS MANAGEMENT AND ENTREPRENEURSHIP, where the

vision from the business world can provide students with much more value than that from the academic world.

This teaching profile is reflected in the students' evaluations, obtaining a 4.7 evaluation in the questions related to the adequacy of teachers in the period 2017/18 to 2020/21, as well as a 4.7 evaluation of the Master Thesis.

Criterion 4.2 Staff development

In the 2019 accreditation, the support and opportunities offered by the institution to improve the quality of the teaching and research activity of the teaching staff were valued positively. It was considered that the teaching staff has considerable institutional support for the development of its functions and for the improvement of the quality of its teaching and research activity.

The university and the EPS are interested in collecting the opinion of the teaching staff in relation to the degree. Based on a survey shared by AQU and all Catalan universities, the UdL organizes a survey every two years.

In the following table, it is observed that the most valued aspects of the EPS faculty are:

- Degree of teaching dedication
- The teaching methodologies
- The evaluation strategies
- The organization of the deployment curriculum (groups, schedules, etc..)

	Academic Year	
	2017-18	2019-20
Questionnaires	Average	Average
Degree survey - Teaching staff	3,88	4,07
0. Degree of teaching dedication:	4,24	4,39
1. Degree of teaching dedication in the degrees / master's degrees in which you participate (in% of your overall dedication as a teacher in teaching, research and management).	4,24	4,39
1. General aspects:	3,83	4,12
1. The institutional support (training / consultation / contributions of the central units) for the development of the teaching activity.	3,65	4,23
2. Teaching coordination in the degrees in which you participate.	3,86	4,10
3. The relevance of internal information mechanisms / systems.	3,90	4,05
4. The relevance of the request to provide evidence that you have received in order to prepare the follow-up reports and the self-report for accreditation.	3,93	4,09
2. Indicate your satisfaction with:	3,87	4,03
1. The admission profile of students	3,44	3,45
2. The structure of the curriculum (subjects and their weight)	3,64	3,94
3. The profile of competences (expected learning outcomes) in the degree	3,82	4,19
4. The organization of the deployment of the curriculum (groups, schedules, etc.)	4,24	4,31
5. The teaching methodologies you have used	4,21	4,37
6. The evaluation strategies you have used	4,26	4,32
7. The work and dedication of students	3,11	3,47
8. The adequacy of the approach, organization and evaluation of the TFG / TFM	3,83	3,92
9. Adequacy of the approach, organization and evaluation of External Internships (if applicable)	4,29	4,17
10. Available teaching resources	4,05	4,20

11. The learning outcomes obtained by the students of the subjects you teach	3,73	4,00
12. Overall assessment of the level of training of the graduate student of the degree in which you participate	3,92	4,04

The institution continues to offer important support to teaching and research activities. The University Teacher Training Service offers each course a Comprehensive University Teacher Training Plan with the aim of improving the activity of university teaching staff as a whole, taking into account that it includes teaching and tutorial action but also research and management. Its website is:http://www.formacioprofessorat.udl.cat/. It is worth mentioning, that these courses also include teacher training in gender perspective. In this sense, three of the courses organized last year were:

- Applying gender perspective to engineering and building programmes.
- The gender perspective as a guarantee of quality and equity of university teaching
- Situation and approach to sexual harassment in universities

It should also be noted the support received by the teaching staff from the Unit of Support and Advice for Teaching Activity, the structure responsible for advising and supporting the face-to-face and online teaching-learning processes of the UdL. This unit promotes teaching innovation processes and the use of information and communication technologies in face-to-face and non-face-to-face teaching-learning processes, focusing efforts on achieving high levels of pedagogical quality. Its website is:http://www.saad.udl.cat/ca/. The support that the teaching staff receives from this unit in the use of the Sakai virtual campus is noteworthy, this being an essential tool in the day-to-day life of the subjects. Likewise, it is worth highlighting the language training offered by the UdL Institute of Languages (http://www.udl.cat/serveis/il.html). Given that our Center makes a clear commitment to the internationalization of our degrees, having these courses is a basic tool for improving the level of languages of the teaching staff.

Concerning research, the Vice-Rector's Office for Research and Transfer (https://www.udl.cat/ca/organs/vicerectors/vrt/) are those who have research competencies and are responsible for the different actions (http://www.udl.cat/ca/recerca/).

The UdL annually announces competitive grants for the implementation of innovation and teaching improvement projects (https://www.udl.cat/ca/organs/vicerectors/voa/innovacio-docent/). Specifically, in the 20/21 academic year, grants are offered, 5 of which are awarded to professors or EPS teams, who carried out the project during the 21/22 academic year. (4_03_MilloraDocencia_202021.pdf).

Teachers have the possibility, through the Erasmus + KA107 Scholarships for teacher mobility, to spend a week at a foreign university with which the UdL has signed an inter-institutional agreement in which they will teach classes and become familiar with the pedagogical experiences that are being developed in the reception center. The grants also offer the opportunity to build international networks of contacts.

The Vice-Rector's Office for Research publishes on their website all the available grants that teachers and doctoral students can apply for in order to encourage their research. It is worth mentioning those calls devoted to the promotion of research, mobility for research or even for

setting up outstanding research project proposals (http://www.udl.cat/ca/recerca/convoca/).

Besdies, the UdL has several research support services such as:

- The R & D & I Support Office is a service of the University of Lleida whose main objectives are to promote research activities and services to companies, respond to the needs of researchers and respond to the needs of public and private institutions integrated in the research and innovation system (http://www.udl.cat/ca/recerca/oficina/).
- The GREC (http://www.udl.cat/ca/recerca/grec/) is a research management tool to locate, consult and update the data and curricula of research groups and researchers. The GREC application also offers information on calls for research grants, internal and external, which may be of interest to both teachers and students (http://www.udl.cat/ca/recerca/convoca/).
- The European Projects Unit (http://www.udl.cat/ca/recerca/oficina/projectes/) is a support and advice tool for the provision and management of projects.
- Scientific-technical Services (http://www.udl.cat/ca/recercaNew/serveis-cientific-tecnics/) are the scientific resources (human and technological equipment) that the UdL makes available to its researchers, other public and private institutions, and companies.
- The Technological Springboard (http://www.trampoli.udl.cat/) supports the creation of technology-based companies and innovative businesses, and the exploitation of intellectual and industrial property.
- The University of Lleida Foundation (http://www.fundacio.udl.cat/) is a non-profit organization that, by the will of the University, sets out to achieve objectives of general interest, the beneficiaries are the university community and society. Among the general interest objectives of the Foundation are to promote relations between the University of Lleida and the socio-economic and cultural environment, promoting scientific, humanistic and technical research; as well as technological innovation, in relation to companies and the development of society
- The TECNIO Network (http://www.trampoli.udl.cat/centres_tecnio) supports the creation of technology-based companies and innovative businesses, and the exploitation of intellectual and industrial property.

The research structures of the UdL are the Departments (http://www.udl.cat/ca/centres/), Research Groups (http://www.udl.cat/ca/recerca/oficina/grups/) and the UdL Research Network (http://www.udl.cat/ca/recerca/anella/).

As part of this network, the INSPIRES center (http://inspires.udl.cat/) brings together all EPS research groups, setting up a multidisciplinary team specialized in the fields of energy management, efficiency, usability, high-performance computing and solving optimization problems, among other topics related to the field of sustainability and the technology. The INSPIRES center has an administrative support technician for researchers, to facilitate all administrative procedures related to linked research projects, which complements the support of the departments for research. In addition, the INSPIRES center regularly organizes seminars open to the entire EPS and UdL community in which the research carried out in the different research groups is shown, especially by doctoral students, As well as taking advantage of the opportunity offered by visiting professors and researchers to be able to explain their scientific production and the training programmes of their universities of origin, and thus explore

possibilities for future collaborations.

The improvements and good practices implemented as a result of the internal evaluation process since the 2015 accreditation are described below.

- **Actions to improve interaction with the business environment:**

The school has substantially increased its relationship with the business fabric of its environment by promoting the following mechanisms:

- **Implementation of Dual Training**

  Dual training has made it possible to further strengthen ties between the Polytechnic School and the surrounding companies thanks to continuous contact, since this training involves periodic meetings between academic tutors and company tutors, facilitating communication and enabling collaboration in other fields. such as research, participation in degree subjects, joint research projects, etc. Throughout the period considered, numerous visits have been made to companies to explain the dual training project, which have borne fruit.in a total of 24 offers of dual training places for the master's degree in industrial engineering and 52 for the master's degree in computer engineering.

  At the same time, the early introduction of Dual Training in the EPS has allowed to be involved in the Working Group for the Promotion and Development of Dual Training in the University System of Catalonia The recent challenges of the Government of Catalonia to build a future based on the Knowledge Society and that materialized in the National Pact for the Knowledge Society (PN @ SC: Pacto Nacional para la Sociedad del Conocimiento) calls on universities to develop strategies and actions that promote collaboration between the system higher education and the business system. More specifically, the Pact suggests the promotion and development of dual training in the Catalan university system, for which it is necessary:

  - Promote dual training in university degrees with a professional profile through a closer relationship between the university and companies and other organizations, to improve the skills of university training students.
  - Develop and apply policies for higher-level dual training, based on the specific context (productive sector - prioritization).
  - Establish a university-company relationship mechanism, to bring together the needs of the professional profiles on the part of the industrial fabric and the productive fabric, characteristic of each territory, the dual nature study plans.

  In this framework, and to consolidate a Catalan university model of dual training, the Academic Programming and Organization Commission considered the creation of a Working Group, within the framework of the Interuniversity Council of Catalonia (CIC), with the main objective of elaborating and agree on the proposals for actions to develop dual training, at the level of the Catalan university system, in order to provide it with mechanisms that facilitate its implementation, both face-to-face and virtual, as an innovative training option to improve employability and the individual development of students, by increasing the adequacy and continuity between the professional world and the academic training of students and achieving better efficiency in the use of

economic resources and better social integration.

The Working Group for the Promotion and Development of Dual Training in the University System of Catalonia is made up of a representative of each University of the Catalan university system, representatives of the General Directorate of Universities and the General Secretariat of the Interuniversity Council from Catalonia, from the Department of Business and Knowledge and a representative from AQU Catalunya. This group is coordinated by Margarita Moltó Aribau, professor at the Polytechnic School of the University of Lleida.

- **Promotion of Industrial Doctorates**
  The Industrial Doctorate Plan aims to contribute to the competitiveness and internationalization of the Catalan industrial fabric, attract talent, and train doctors for companies within R + D + I projects. The essential element of the Industrial Doctorate process is the strategic research project of the company where the doctoral student develops his research training in collaboration with a university, and which is the subject of a doctoral thesis. For universities, industrial doctoral projects are an opportunity to transfer their technology and knowledge in the productive environment and thus strengthen ties with the business world. EPS has not been left out of this great opportunity and has participated since its inception. So far, three industrial doctoral theses have been presented (in the companies Scytl, Ilerfred and Sallen) and another three are being developed, two in the computer company Lleida.net and one in the industrialized building company PMP Prêt-à-Porter casas.
  Link to Industrial Doctorates.
  http://www.udl.es/ca/serveis/oficina/Noticies/La-UdL-inicia-els-seus-primers-cinc-doctorats-industrials/
  http://www.eps.udl.cat/ca/noticies/LEPS-present-en-lacte-de-reconeixement-als-Doctorants-Industrials/

- **Renewal of chairs with companies (INDRA)**
  The University of Lleida has developed, through the Indra-Adecco Foundation chair, a set of accessibility tools that facilitate the access of people with motor disabilities to new technologies. Within the framework of this Chair, successful technological solutions such as the HeadMouse virtual mouse and the VirtualKeyboard virtual keyboard have been developed, of which nearly 400,000 downloads have already been recorded worldwide. In addition, REM and APR projects are being developed that can transform the way people interact with computers. The REM project consists of a hardware device that is connected to a computer with a USB connector that will allow to control the movement of the cursor with the movement of the eyes. This project is designed as an accessibility tool for users who cannot move with their head and, therefore, cannot use HeadMouse. And finally, the APR concept arises from the need for a worker with a disability to be able to carry out their work electronically, attending meetings or enjoying moments of relaxation with their colleagues.

- **Strengthen the relationship with companies in the Gardeny Technology Park**
  The Lleida Agrifood Science and Technology Park, located in Gardeny, is an ambitious and strategic commitment of the territory in order to promote innovation and

technological quality in Lleida companies, favoring the transfer of knowledge and improving the competitiveness of the companies. It is a public consortium owned 50% by the University of Lleida and the City Council.
According to 2016 figures, the park welcomes 1,410 workers and researchers (mainly engineers and university graduates), with a joint turnover of € 124.1M and a total investment of € 85M.
Since its inception, the EPS has collaborated closely with the companies of the Park (INDRA, GFT, Eurecat. IFR, Semic, Lleida.net ...), both for the relationship of curricular or extracurricular practices of our students and for the development of works end of degree / master's degree within these companies. In the last period, these relationships have intensified even more due to the necessary complicity for the implementation of Dual Training, as well as for the development of industrial doctorates in some companies.
This close relationship with the productive sector is a strength of the EPS that should undoubtedly continue to be consolidated.

- **Specific program to improve teaching infrastructures and laboratories**

The Campus Vice-Rectorate launched a Call for Teaching Teams (47UdL_Convocatoria_Equipos_Docencia.pdf) during the 2016-2019 period, with the aim of updating, renovating, expanding or even creating new teaching laboratories in the different faculties. In the case of the EPS, the budget allocation has been significant, as shown in the following table:

Year	2016	2017.	2018	2019	Total
Endowment €	72,884	86,663	98,094	44,570	**302,211**

This call has made it possible to equip the EPS with laboratories with very up-to-date technological equipment, both in the field of industrial engineering, computer engineering and technical architecture.
The improvement of the facilities has continued throughout the 2019-2021 academic years, in section 2.4 you can find a detailed list of the improvements in infrastructures, laboratories and software.

- **Programme IMPULS to promote strategic teaching projects**

The UdL has a Teaching and Training Strategy ,approved by the Governing Council in February 2014 and updated in July 2020 (48UdL_Teaching and Training Strategy) that wants to build a differentiated teaching model with its own identity, within the Catalan and Spanish university system. A model that has its distinctive features.in the academic and social prestige, in the integral quality of the teaching, and in the guarantee of the employability of the training. Among the different actions that this strategy contemplates, it stands out the annual Programme of Actions to Promote the Academic and Social Prestige of Official Studies (Programme IMPULS) This programme is addressed to the seven faculties , and its main objective is that the faculties develop a series of actions aimed at strengthening the academic prestige and social prestige of the different undergraduate and master's degrees. In EPS, this programme has allowed financing actions such as:

  - Promotion of internationalization: international double degrees, WWEPS event of international partners, institutional visits to partner universities, increasing the number

of mobility destinations ...
- Promotion of scientific-technological vocations: organization of workshops for secondary schools, participation in activities to promote and disseminate technology such as the First Lego League, Ciència al Carrer, Mercat de la Tecnologia, etc.
- Invite international teachers to do stays and conferences at the EPS.
- Promote the mobility of teachers.
- Improve the School's promotional resources: prepare a promotional video, new brochures, improve the presence on social networks, etc.

- **Administrative support for the INSPIRES Research Center and its researchers.**
  - The INSPIRES research center has hired an administrative support technician, whose functions are:Help research groups in attracting research resources.
  - Collaborate in the process of contacting companies interested in carrying out innovation and research with the INSPIRES research groups.
  - Administrative support to the INSPIRES own research center.
  - Support to research groups in the economic justification of the research projects developed by the center itself.

Analysis of changes due to the pandemic: The EPS has kept teachers informed of the updates made by the SIC (Information and Communication Systems) to provide all kinds of tools and services to facilitate remote monitoring of subjects (recorded classes, videoconferences, questionnaires, forums, tests) , as well as the Instructions in the preparation of the evaluation tests using the test tool and questionnaires of the virtual campus, with the aim of guaranteeing the proper development of the tests and eliminating incidents or possible overloads of the system.

Since the beginning of the pandemic, the UdL has offered various online courses to learn about virtual teaching methodologies, as well as the use of the tools available on the virtual campus. The follow-up of the courses at the Polytechnic School has been as follows:

Academic year	**2019-2020**
Course Name	**Course Attendees**
Virtual teaching	**39**
III CONFERENCE ON UNIVERSITY AND ICT TEACHING ACTIVITY # ADUTIC20: THE MANAGEMENT OF NON-FACE TRAINING	15
THE VIRTUAL CAMPUS TOOLS TO CARRY OUT BLENDED TEACHING	20
USING THE UDL VIRTUAL CAMPUS TEST TOOL	3
USING THE VIRTUAL CAMPUS VIDEOCONFERING TOOL	1
Altres courses	**68**
WE LEARN AND TEACH WITH COMMUNITY RESOURCES AND THROUGH ART. HOW WE CAN INCORPORATE IT IN OUR UNIVERSITY	1
CHALLENGE-BASED LEARNING IN THE CONTEXT OF DUAL TRAINING I	1
OPEN SCIENCE: OPEN PUBLICATIONS (IGUALADA CAMPUS)	8
HOW TO WRITE AND PUBLISH A SCIENTIFIC ARTICLE	1
HEALTH AND WELL-BENG EDUCATION	4

Academic year	**2019-2020**
Course Name	**Course Attendees**
TOOLS FOR INTERVENTION IN GENDER-BASED VIOLENCE IN THE ACADEMIC AREA	1
INTRODUCTION TO MINDFULNESS	2
SCIENTIFIC DAY OF INDEST: THE INSTERDISCIPLINARITY IN THE SOCIAL SCIENCES AND THE HUMANITIES	3
CONFERENCE ON ACTIVE TEACHING TECHNOLOGIES AND METHODOLOGIES AT THE POLYTECHNIC SCHOOL AT THE IGUALADA-UdL UNIVERSITY CAMPUS 19/20	17
CONFERENCES FOR COORDINATORS OF TRAINING PROGRAMMES (DEGREES)	6
CONFERENCES FOR COORDINATORS OF TRAINING PROGRAMMES (MASTERS)	1
EUROPEAN PROJECTS. HOW TO WRITE A HORIZON 2020 PROPOSAL FOR RESEARCHERS WITH PREVIOS EXPERIENCE IN COMPETITIVE PROPOSALS	6
EUROPEAN PROJECTS. FINANCING, HORIZON 2020 PROGRAMME AND ADMINISTRATIVE AND FINANCIAL ASPECTES FOR BEGINNERS	4
WHAT CAN THE LIBRARY OFFER TO THE MEW EPS TEACHERS ON THE IGUALADA CAMPUS	2
COMPETECS SEMINAR: APPLICATION OF THE OBSERVATIONAL METHODOLOGY IN COMPETENCE-CENTERED RESEARCH	1
EMOTIONAL EDUCATION WORKSHOP FOR HEALTH AND WELL-BEING	1
ROUND TABLE: REVERSE CLASS USE EXPERIENCES AT UDL	9
Total	**107**

Academic year	**2020-2021**
Course Name	**Course Attendees**
Virtual teaching	101
ONLINE TEACHING TRAINING ACCORDING TO THE UNADISTA FRAMEWORK	8
STRATEGIES TO IMPROVE ONLINE EVALUATION	4
II TRAINING SEMINAR HYBRID CLASSROOMS PROJECT: RESOURCES AND ORIENTATIONS AFTER AN ACADEMIC YEAR OF HYBRID TEACHING. EDUCATION AND ADOLESCENCE CHAIR	1
IMPLEMENTATION OF A TEACHING VIRTUALIZATION PROJECT: USE OF THE VIRTUAL CAMPUS, INTERACTIVE TOOLS AND MOBILE DEVICES	1
IV CONFERENCE ON UNIVERSITY AND ICT TEACHING ACTIVITY # ADUTIC21: THE EVALUATION OF LEARNING IN TIMES OF CONFINITION	5
CONFERENCE ON ACTIVE TEACHING TECHNOLOGIES AND METHODOLOGIES AT THE HIGHER POLYTECHNIC SCHOOL AT THE IGUALADA-UdL UNIVERSITY CAMPUS 20/21	17
THE VIRTUAL CAMPUS LESSON TOOL	2
THE KALTURA TOOL, VIDEO STREAMING ON THE VIRTUAL CAMPUS	16
LET'S TALK ABOUT VIRTUAL CAMPUS TOOLS: LESSONS, FORUMS AND TESTS	3
USE OF THE TEST TOOL OF THE UDL VIRTUAL CAMPUS	3
VIRTUAL WORKSHOP ON TEACHING IN COVID TIME AT EPS-UdL 20/21	41
Gender perspective	19

Academic year	**2020-2021**
Course Name	**Course Attendees**
APPLICATION OF THE GENDER PERSPECTIVE IN TEACHING: FIELD OF ENGINEERING AND ARCHITECTURE	9
THE GENDER PERSPECTIVE AS A GUARANTEE OF QUALITY AND EQUITY OF UNIVERSITY TEACHING	4
SITUATION AND APPROACH TO SEXUAL HARASSMENT IN UNIVERSITIES	6
Others	104
COMPOSITIONAL DATA ANALYSIS IN SOCIAL SCIENCES	1
ACTIVE LEARNING IN LARGE GROUPS	2
OPEN SCIENCE: PUBLICATIONS AND OPEN RESEARCH DATA	1
HOW TO WRITE AND PUBLISH A SCIENTIFIC ARTICLE	1
HOW TO CARRY OUT PATENT SEARCHES IN FREE DATABASES	6
COMPETENCES AND PEDAGOGICAL TRAINING OF UNIVERSITY TEACHERS	1
MANAGEMENT, CORRECTION AND EVALUATION OF TFG AND TFM	4
THE REVERSE CLASS MODEL: AN ALTERNATIVE TO ONLINE TEACHING	2
THE PROCESSES OF TEACHER ACCREDITATION BEFORE THIS CATALONIA: READER, AGGREGATE AND PROFESSOR	10
CONTINUOUS EVALUATION STRATEGIES IN LARGE GROUPS	6
STRATEGIES FOR IMPROVING THE WRITING OF SCIENTIFIC ARTICLES IN THE FIELD OF THE SOCIAL SCIENCES	1
STRATEGIES TO IMPROVE PROGRAMMING LEARNING IN ENGINEERING	12
ACADEMIC AND TEACHING MANAGEMENT AT THE HIGHER POLYTECHNIC SCHOOL (EPS) II - DDTEC	3
MENDELEY BIBLIOGRAPHY MANAGER - ADVANCED	1
BIBLIOGRAPHY MANAGER MENDELEY - BASIC	1
BIBLIOGRAPHY MANAGER MENDELEY (CAMPUS IGUALADA)	1
IMPLEMENTATION OF UNIVERSAL SUPPORT MEASURES FOR INCLUSIVE LEARNING WITH ALL STUDENTS	1
INDICATORS AND METHODS FOR EVALUATING SCIENTIFIC PRODUCTION: SCIENCES	1
INTRODUCTION TO THE USE OF ARCGIS FOR THE PRESENTATION AND ANALYSIS OF SPATIAL DATA	2
THE REVERSE CLASS AS AN ALTERNATIVE TO DISCONTINUOUS PRESENCE	5
TEACHING DIGITAL COMPETENCE: CHALLENGES AND OPPORTUNITIES IN THE DIGITAL CONTEXT	1
TEACHER-CENTERED TEACHING: IMPROVING EXPOSITIVE TEACHING	2
STUDENT-BASED LEARNING	4
LEARNING SERVICE AT THE UNIVERSITY AND THE OPTIMIZATION OF QUALITY IN HIGHER EDUCATION	2
LEARNING-ORIENTED EVALUATION: WHAT CAN WE DO TO GO BEYOND QUALIFICATION	2
OPTIMIZATION OF TIME AT WORK	3
EUROPEAN PROJECTS. HOW TO WRITE A HORIZON EUROPE PROPOSAL FOR RESEARCHERS WITH PREVIOUS EXPERIENCE IN COMPETITIVE PROPOSALS	2

Academic year	**2020-2021**
Course Name	**Course Attendees**
EUROPEAN PROJECTS. STRUCTURE OF THE NEW HORIZON EUROPE PROGRAM, TECHNICAL, ADMINISTRATIVE AND FINANCIAL ASPECTS FOR BEGINNERS	7
DATA PROTECTION	2
PROTECTION, VALORIZATION AND TECHNOLOGY TRANSFER. KEY STRATEGIES AND FACTORS TO KNOW	3
TEACHING RESOURCES IN THE FIELD OF ENGINEERING: INFORMATION RESOURCES AND TEACHING SUPPORT SERVICES (CAMPUS IGUALADA)	3
ROUND TABLE: INTERACTIVE TOOLS TO DYNAMIZE TEACHING	5
ROUND TABLE: EXPERIENCES OF USING GRAPHIC TABLES FOR THE DEVELOPMENT OF TEACHING AT THE UDL	4
EMOTIONS, FEELINGS AND STRESS MANAGEMENT TECHNIQUES	1
NEGOTIATION TECHNIQUES	1
Total	**224**

Criterion 4.3 Funds and equipment

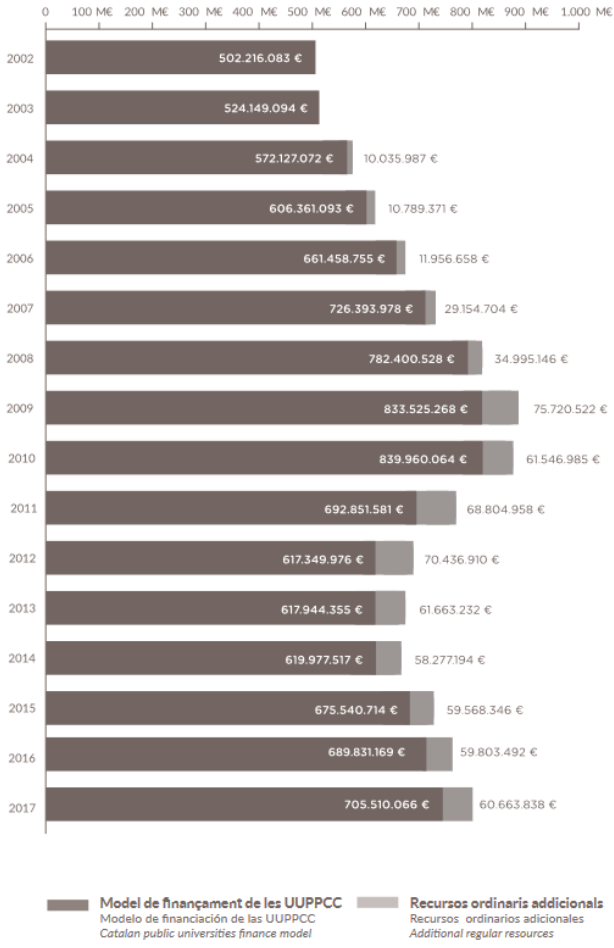
Financial resources

The University of Lleida is one of 7 Catalan public universities that receive funding from the Generalitat de Catalunya. The government annually sets the public price rates for university studies and therefore the basic source of income for public universities. Apart from income from fees, Catalan public universities receive public resources from the Administration of the Generalitat:

- for your running costs
- to achieve strategic objectives
- for investments and equipment

The Generalitat of Catalonia, which from 2003 to 2010 had notably increased public funding for university activity, applied significant restrictions during the hardest years of the crisis, from 2011 to 2013. As of 2015, it will rising slowly, reaching in 2017 at similar levels of 2007.

Figure 1. Evolution of funding in Catalan public universities



Source: Training and teaching indicators of Catalan public universities. Report 2018. ACUP. https://indicadorsuniversitats.cat/wp-content/uploads/2020/08/informe_docencia_2018.pdf .

The evolution of the financing of Catalan universities is reflected in the evolution of the budget of the University of Lleida, which is shown in the following table.

Evolution of the UdL budget. Period 2016-2021

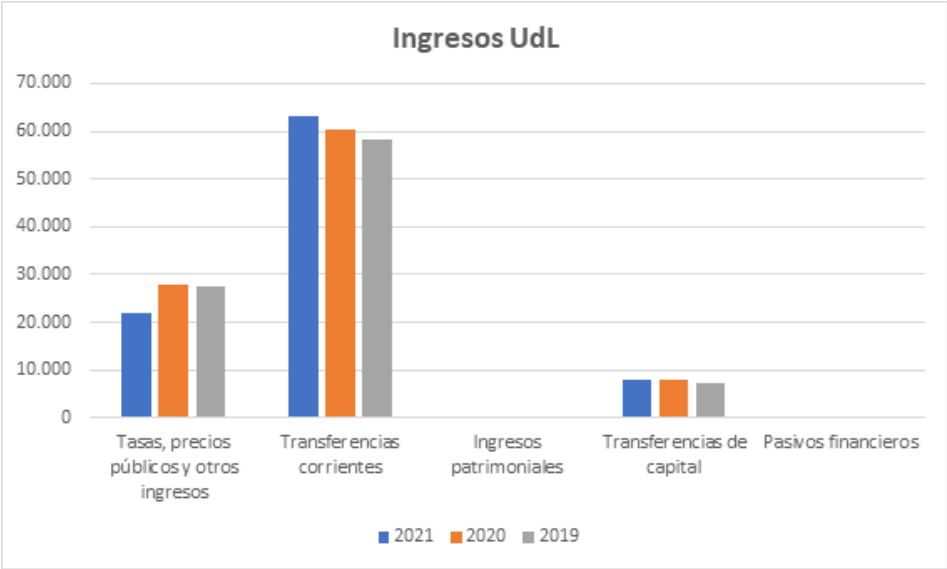
Year	UdL general budget	% Variac.
2016	81,351.00 M (€)	
2017	83,073.00 M (€)	2.12%
2018	84,871.00 M (€)	2.16%
2019	93,756.00 M (€)	10.47%
2020	96.304,00 M (€)	2.72%
2021	93,180.00 M (€)	-3.24%

Source: Own elaboration from UdL budgets

The budget increment that occurs in 2019 is due to the incorporation into the university of a new Campus located in Igualada.

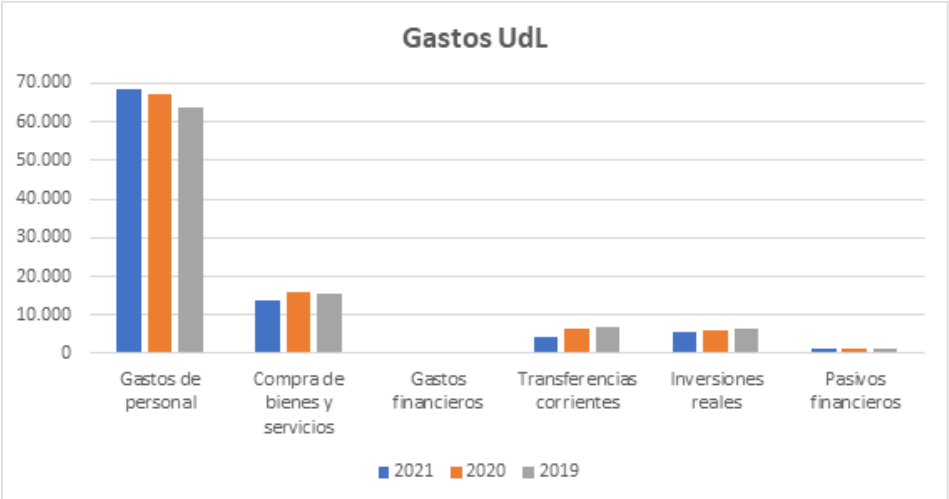
Figure 2 shows the total income corresponding to the UdL in the periods 2019, 2020 and 2021, where it can be observed that more than 60% of the budget comes from transfers from the Generalitat (Current Transfers), while 25% comes from tuition fees.

Figure 2: UdL revenue 2019-2021.



Source: Own elaboration based on the 2020 and 2021 UdL budget.

Figure 3: UdL expenses 2019-2021.



Source: Own elaboration based on the 2020 and 2021 UdL budget.

With this general budget, the University of Lleida finances personnel expenses, ordinary expenses and infrastructure associated with the 7 teaching centers and the different departments and services of the University, as can be seen in Figure 3. Likewise, Figure 3 shows the expenses corresponding to the years 2019, 2020 and 2021. In this same Figure it can be seen how the personnel expense accounts for 74% of the total expense. On the other hand, and in addition, it also distributes a budget, basically for the goods and services chapter, by teaching center and by department that allows the directorates and deans to make university policy and undertake strategic actions.

The amount of the budget that is distributed among the centers of the University is divided into three blocks:

- Block A (55%): dimension
- Block B (35%): financing by objectives
- Block C (10%): funding for programmes

Block A: It is an amount that the University of Lleida assigns to the different centers according to their size, where the key variables are the number of students at the Center, the number of teachers and the demand for teaching hours.

Block B: It is assigned based on the year-on-year evolution of the School performance indicators, which are:

- Efficiency rate
- Drop-out rate
- Performance rate
- Number of degrees with more than 30 new students per year

Block C: This assignament is the result of an agreement reached between the Center and the vicerectorate, based on the definition of a series of strategic improvement actions that must be achieved throughout the year. These strategic actions will have their origin both in the

monitoring reports of the degrees, and in the monitoring of the Center's Improvement Plan.

In this way, Blocks A and B will be assigned and transferred at the beginning of the budget period, while Block C will only be transferred at the end of the year in the event that the Center complies with the agreed agreements.

In the case of thePolytechnic School, the annual budget allocation received from the University of Lleida is shown in the following table:

Budget AllocationPolytechnic School. Period 2016-2021

Year	Block A	Block B	Block C	TOTAL
2016	25,277.68	14,383.91	4,513.00	44,174.59
2017	24,722.72	14,563.41	5,050.00	44,336.13
2018	25,947.93	12,783.43	6,064.42	44,795.78
2019	26,746.71	15,167.38	3,182.73	45,096.82
2020	26,746.71	15,167.38	5,347.00	47,261.09
2021	25,747.80	11,375.54	4,760.10	41,883.44

Source: Own elaboration from UdL

This budget is basically dedicated to the chapter of goods and services of the School, such as the rental of equipment (photocopiers and printers), hardware maintenance, purchase of office supplies, advertising and propaganda expenses, conferences, training of faculty, formal attentions, registrations in professional associations such as deans' conferences, etc. ..

Apart from this ordinary budget, the Polytechnic School has other sources of financing that are irregular in nature and that come from:

- EPS participation in the enrollment of the master's degrees, set at 20% by the UdL management
- Fee for extracurricular internship agreements signed at the School and for calls
- Announcements or programmes undertaken by the University rector's team to promote strategic actions.

Additional income from thePolytechnic School. Period 2016-2020

Year	2016	2017.	2018	2019	2020
Ingr. matr. Master's degrees	€ 1,915.65	€ 46,866.23	€ 10,861.75	€ 69,171.61	€ 19,860.91
Ingr. extracurricular agreements	€ 2,827.30	€ 4,636.41	€ 5,363.58	€ 6,000.06	€ 3,843.66
Ingr. Special programs	€ 25,000.00	€ 14,266.86	€ 0.00	€ 26,333.33	€ 17,658.00
Cross-disciplinary subject	€ 1,541.67	€ 3,843.18	€ 1,428.40	€ 2,253.24	€ 395.30
Repeated teaching	€ 26,982.82	€ 26,079.83	€ 35,598.19	€ 31,959.82	€ 33,679.31
Zero courses	€ 2,853.98	€ 6,423.30	€ 4,249.26	€ 7,905.60	€ 6,120.00

Source: Own elaboration based on EPS budgets.

These additional resources allow the management of the School to carry out strategic actions such as: internationalization, the promotion of scientific-technical vocations, the dissemination of the Center and the improvement of teaching infrastructures.

During the 2016-2019 period, the Infraestructures Vice-Rectorate launched a Call for Teaching Teams, with the aim of updating, renovating, expanding or even creating new teaching laboratories in the different faculties. In the case of the EPS, the budget allocation has been significant, as shown in the following table:

Calls for teaching facilities 2016/19 EPS

Year	2016	2017.	2018	2019	Total
Endowment €	72,884.00	86,663.00	98,094.00	44,570.00	**302,211.00**
Center contribution	25,168.91	13,854.87	14,714.10	6,685.50	**60,423.38**

Source: Own elaboration from the calls of the EPS

This call has made it possible to equip the EPS with laboratories with very up-to-date technological equipment, both in the field of industrial engineering, computer engineering and technical architecture. A detailed account of the improvements in infrastructures, laboratories and software during this period can be found below.

In this sense, from the 16/17 academic year, the EPS management undertook a policy of adapting the School's teaching laboratories to the new undergraduate and master's degrees, as a result of the process of adaptation of the UdL to the EEES. This was possible, despite the reduction in the budget allocations of the School by the UdL, due to the application of the additional financial resources shown in Table 11 and the remnants of different budget years that had been accumulated for this purpose. This has meant an investment in recent years of more than € 146,958.24

The financing of the center, which has its origin in public resources, is complemented by some contributions from the private sector by companies, in the form of sponsorships, or institutions (Lleida City Council, Lleida Provincial Council, Social Council of the UdL, Commission of Culture UdL and Igualada City Council in 2020).

Income from sponsorships of companies and institutions

Year	Income from public entities	Private sector income	Total Sponsorship Income
2016	€ 13,844.51	€ 7,300.00	€ 21,144.51
2017	€ 14,373.67	€ 8,000.00	€ 22,373.67
2018	€ 13,959.60	€ 9,500.00	€ 23,459.60
2019	€ 13,513.22	€ 9,500.00	€ 23,013.22
2020	€ 20,244.67	€ 9,000.00	€ 29,244.67

Source: Own elaboration from EPS budgets

These contributions make it possible to undertake extraordinary activities complementary to the strategic actions of the School such as: The First Lego League (http://www.firstlegoleague.udl.cat/ca/), "Technology Market" (http://www.ice.udl.cat/ca/activitats/tecnologia/) and the World Robot Olympiad (http://www.eps.udl.cat/ca/noticies/Emocio-i-Robotica-en-la-5a-edicio-de-la-WRO-Lleida/). It must be said that these activities are basically aimed at promoting the scientific-technical vocation among secondary and high school students.

Regarding the two departments that are adscribed to the Polytechnic School, which are the Department of Informatics and Industrial Engineering (DIEI) and the Department of Mathematics, they also have a budget allocation that is presented in the following table:

Budgetary allocation of departments attached to the EPS. Period 2016-2021

	TOTAL BUDGET	
Year	DIEI	Math
2016	32,798.87	17,005.78
2017.	33,716.48	17,403.99
2018	34,204.23	17,338.87
2019	35,108.83	18,382.87
2020	34,531.11	18,923.30
2021	31,298.33	14,192.48

Source: Own elaboration from UdL budgets

This allocation is distributed among their professors and is devoted to expenses related to teaching, purchase of bibliography, renovation of personal IT infrastructure, ordinary expenses and supplies or assistance to conferences

Finally, it should be noted that the 9 research groups of the School, all of them classified as Consolidated Research groups by the Generalitat de Catalunya (http://www.eps.udl.cat/ca/recerca/grups-de-recerca/#sections-tab-9), have their own funding sources, obtained from competitive research calls, which allow them to finance the expenses associated with the research field.

Inputs		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	TOTAL
Special actions	34	2	1	1	0	1	0	2	0	0	0	**41**
Research grants	225	26	22	19	19	3 4	21	16	13	10	2	**407**
Contracts	604	43	33	3. 4	31	22	44	124	238	189	122	**1484**
Aid to Consolidated Groups	8	0	0	9	0	0	9	0	0	0	0	**26**
Infrastructures	10	0	0	0	0	0	0	0	0	0	0	**10**
European projects	12	2	4	2	1	2	2	1	0	2	0	**28**
Research projects	81	2	5	4	4	7	7	6	7	8	0	**131**

Source: GREC (http://webgrec.udl.cat/)

These groups are integrated into the INSPIRES Research Center (Institut Politècnic d'Innovació

i Recerca en Sostenibilitat),http://inspires.udl.cat/, which receives financing from the UdL shown in the following table:

Published INSPIRES financing budget. Period 2017 - 2020

Year	INSPIRES Budget
2017	40,000.00
2018	55,000.00
2019	50,000.00
2020	44,341.00

Source: Own elaboration based on data from the Vice-Rectorate for Research.

The available material resources and teaching infrastructures of the center and university were valued very positively as "in progress to excellence" in the previous accreditation of 2019.

The teaching classrooms, laboratories and offices, distributed mainly between the two EPS buildings, the EPS central building and the CREA (Center for Research in Applied Energy) guarantee the proper functioning of the degrees taught. Complementary services such as the integrated Common Spaces Management system (GEC), the Information and Communications Systems Area (SIC), the Library and Documentation Service (SBD), Sakai Virtual Campus, among others, allow us to offer all agents involved in the learning process all the necessary resources for its development with quality. Detailed information on these resources was described in depth in the past Accreditation Report.

Both the 2015 and 2019 accreditation processes appraised favourably the infrastructures an resources of the faculty, such as the teaching spaces, laboratories and the SAKAI virtual campus. IIn particular, the integrated space management system GEC was positively valued, which remains active and is crucial to optimize room scheduling in a campus shared by three different faculties. Since the last accreditations, all these resources have been maintained and improved.

The actions carried out to improve and expand the teaching and research laboratories since 2015 are detailed below.

- **Renovation and updating of laboratory equipment:**
  - **Course 14/15**
    - **Metallographic microscope. Mechatronics Laboratory (CREA)**. In order to teach the practices of the new optional Energy block corresponding to the Master in Industrial Engineering (Electric machinery in Industry and Analysis of Industrial thermal equipment), a Flir E4 infrared thermographic camera is purchased, a bench with electric motor and brake hysteresis and a variable speed ACU 0.37KW. Likewise, a TECMICRO metallographic microscope was also purchased to improve the practices of the GEI students and some analog modules per automaton and a linear / isopercent regulation valve.
    - **Material for heat transfer practices. Thermal Engineering Laboratory**

(-1.05). In order to carry out heat transfer practices for GEM, GEEIA GEEIA and MEIND students, a commercial team was acquired for this purpose.

- **Mobile laboratory of embedded systems.** For the improvement and adaptation of the laboratory material of this laboratory used by the MEInf students, as well as in various promotional actions of the EPS, we proceed to the purchase of 20 Arduino UNO boards, 20 ADXL335 accelerometers, 20 ultrasound sensors, 15 mice and 15 keyboards.
- **Bending device for prismatic specimens. Materials Laboratory - Building (CREA).** In order to improve the equipment of CREA's materials-building laboratory, a bending device for prismatic 15x15x60 specimens, Model CONTROLES, was purchased, as well as a complete set of work tools for the workshop located in the Materials laboratory.
- **Two Emotiv helmets. UsabiliLAB Laboratory (3.02).** In order to develop new practices with the discipline of Brain-Computer Interaction in the degrees of the GEI and the MEINF 2 Emotiv helmets have been adquired.
- **Laboratory instruments. Mechanics Laboratory (-1.04).** Up to 5 3D printers with FDM technology have been acquired to carry out additive manufacturing practices in the subject of "Advanced Manufacturing Systems". In addition, these printers make it easier for students to materialize prototypes that have been designed in their TFM. On the other hand, laboratory materials and instruments were also purchased for the study and analysis of shaft balancing and also for the realization of an experimental equipment to analyze the flexibility of shafts and resonance speeds, and to be able to compare them with the results obtained by simulation. of finite elements using the CREO programme.
- **Computer material. Electronic Control Laboratory (2.06**). We proceeded to the purchase of 2 BEEP TLM0596 computers with LG 19.5 "screen with keyboard and mouse.
- **Computer equipment and improvement of facilities. Computer Laboratory (3.05).** Installation of 21 PCs with Windows 7 Professional 64-bit and Linux Ubuntu 12.04LTS operating systems and a 21" widescreen monitor, and a new 2.20 m electric screen to replace the old 1.80 m manual screen,.The wiring of the classroom projector has been enhanced incorporating HDMI cable and a new connection box. Finally a sound system with self-amplified speakers was also assembled.
- **Improvement of facilities. Alcatel classroom (1.02).** The structured cabling of the extended workstations in the classroom was carried out so that the students of the GEI, GEEIA and MEINF can have access to the equipment of the different racks.
- **Stereo. Classroom 1.04.** Sound equipment was installed in classroom 1:04 of the EPS, which was the only classroom in the School where there was none.
- **Improve computer equipment. Degree Room (2.03).** The old monitor on the main table in the Graduation Room was replaced with a 19.5" reclining ACER LCD touchmonitor.

- **Course 15/16**
  - **3D printing and hydraulic bench. Equipment for the mechanical**

laboratory. Equipment for the manufacture of pieces for 3D printing was acquired, which allows students to materialize their designs elaborated in subjects such as Graphic Expression III and Machine Design, in addition to learning a leading technology . This equipment consists of a milling machine, a 3D printer and the parts of a second 3D printer to build it in the laboratory, as well as transportation to and from the supplier for defective ones. A hydraulics bench was also purchased to carry out hydraulics practices. This equipment allows students to become familiar with real oleo-hydraulic equipment.

- **Experimental equipment (thermal power plant and linear heat conduction) for the Thermal Laboratory and facilities.**One of the most used cycles in the industrial world, both in thermal power plants and in cogeneration systems is the Rankine cycle. With the aim of knowing this cycle and that our students can study it experimentally, a steam power plant with a steam engine was acquired. Along the same lines, the practice "Linear heat conduction" was purchased with which students can experience the phenomena of heat transfer by conduction in linear systems.
- **Total surveying station for the Building Laboratory.**Purchase of a Leica Robotized Total Station TRCP1203R100 with automatic prism search "Power Search". The "Total Leica" station is a robotic equipment to carry out surveying field practices to be able to carry out topographic surveys with a single operator. This operation has been co-financed 50% with the ETSEA center of the UdL and is used basically in the degree of Technical Architecture and Building.
- **Blower Door Test Equipment for the Building Laboratory.**Acquisition of equipment for the measurement of air infiltrations and thermofluxometric analysis. The practice "Air infiltration analysis" was acquired to measure air infiltrations through doors and windows in an existing building, by means of the Blower Door Test. The Blower Door Test measures the tightness of a building, the air tightness, that is, it measures the energy efficiency of buildings. It is used to carry out energy audits of buildings and is used both in the Technical Architecture and Building qualifications, as well as in Mechanical Engineering, specializing in Sustainable Construction.
- **Improvement of the material of the Electronic Teaching Laboratories 02.05 and -1.03 EPS.** To improve these laboratories, the following material was purchased:
    - A high frequency oscilloscope with its corresponding analysis kits.
    - A Nase-2B pencil soldering station with corresponding components and common parts.
    - A compact CD-2SE soldering station with corresponding components and common parts.
    - A TE 2QD hot air soldering station with corresponding components and common parts.
    - A microscope attached to the DME-2ª soldering station
    - A welding source.
    - An electronic component positioner.

- A solder paste applicator for the component plates.

To protect the tables where these soldering stations have been installed, table protectors were purchased. All this material is used in the degree of Engineering in Electronics Industry and Automation.

- **Eyetracking Device for the Descriptive Technologies Laboratory.**The Eyetracking device has been purchased that allows usability studies to be carried out beyond the specific monitor that was available to date. Likewise, a cluster for Big Data processing was acquired, in order to have a Big Data computing platform that allows this new technology to be addressed in degrees in the computing branch.
- **Structural kits for the Building Laboratory.**Kits to model structures and molds to manufacture concrete specimens. To improve the study of structures, 10 MOLA kits were acquired that allow to simulate a large number of different structures quickly, thanks to the use of magnets and balls to make the joints and thus be able to observe their real behavior.
- **Improvement of the computer installation in Classrooms 0.01 and 0.05**. Since this academic year, all the classrooms of the School have a monitor installed on the teacher's table in order to facilitate the teacher's monitoring of the classroom projection: It was also used to install an AV box embedded in the teacher's table. teacher from where he can comfortably access the signal bypass, internet, USB port and HDMI.
- **Alcatel Room Adaptation**. The last enlargement of the Alcatel Room (1.02) forced this course to reinforce the projection aimed at the last jobs in the Room with a 42 "TV, since the distance and the columns made it impossible to correctly visualize the projection cannon. Taking advantage of this intervention, the room was re-cabled with HDMI, an AV box was incorporated to be able to comfortably discriminate the output of the projection gun and the old projection gun was replaced by a modern one with HDMI input and better image quality.

- **Course 16/17**
  - **Improvements in the Mechatronics Laboratory (CREA).** A KUKA six degrees of freedom industrial robot was purchased in order to analyze and visualize the three-dimensional kinematics of multibody systems. Currently, EtherCat, modules of both digital inputs and outputs and analog inputs and outputs, are being integrated into the robot's own communication network in order to provide the robot with information about its operating environment and facilitate its programming. Communication is also planned between the robot and the Siemens PLC, which is available in this laboratory, in order to be able to use a Siemens artificial vision camera to identify objects and programme movements of the robot. With all this, it is intended that students acquire skills in the control of processes in real time.
  - **1.03 EPS laboratory adequacy for project-based work.**A replacement of the furniture in the EPS 1.03 Project room was carried out. This replacement has been accompanied by a new redistribution of the classroom and the updating of computer equipment. Specifically, 24 new PCs have been installed.
  - **Adaptation of the 2.06 EPS Signal Processing Laboratory and creation**

of a new teaching classroom. In the summer of 2016, it was decided to divide the Signal Processing laboratory into two independent spaces, one with the same nature and purpose and the other transforming it into a teaching classroom with capacity for 28 students.

- **Classroom adaptation 0.04 EPS for autonomous work in computer science degrees**. In classroom 0.04, a series of interventions were carried out to adapt it to the needs of Computer Engineering students. Specifically, a wifi signal repeater-amplifier was installed, as well as plugs in the tables to facilitate the use of laptops. The classroom was also equipped with a camera system to facilitate the monitoring of classes by a new student with severe visual difficulties enrolled in that course.

- **Course 17/18**
  - **Creation of the Design Lab.** Some spaces on floor 0 of the EPS were reorganized in order to build this laboratory, which will be equipped with furniture, teaching equipment and Macintosh-type computer equipment during the 18/19 academic year.
  - **Ethernet cabling in EPS classroom 1.04**. To complement the improvements implemented the previous year (Wi-Fi and plugs in the laptop tables), several direct network connections for Ethernet cable have been installed.
  - **Renovation of the Physics and Chemistry laboratory equipment (-1.02).**Various materials were acquired with the aim of improving the performance that the physics laboratory already has and replacing some equipment that was already at the limit of its useful life. This material is used for the practices of the Physics I and Physics II subjects of the degrees of Mechanical Engineering, Industrial Electronics and Automation Engineering and Energy and Sustainability Engineering. List of purchased material:
    - 1 "Maxwell's wheel experiment, brand LD Didactic".
    - 2 1m lane dynamic system.
    - 2 PAStrack curved rail system.
    - 1 Capstone Programme, classroom license.
    - 1 Capstone Programme, lic. Monopost.
    - 4 Airlink interface.
    - 2 Wireless force / acceleration sensor.
    - 6 Wireless temperature sensor.
    - 4 Motion sensor.
  - **Teaching equipment for the generation of renewable energies and systems simulation.** Didactic equipment for the generation of renewable energies and systems simulation were purchased. In addition, work is being done on the purchase of a photovoltaic energy trainer with virtual instrumentation and a solar panel with a rolling mast and collector. A Synchronous Generator Trainer team was acquired for the practice of electrical machines. All this material is intended for specific subjects, basically second and third year, of the new degree in Energy Engineering and Sustainability.

- **Material for carrying out practices in the Electricity laboratory (-1.03).**This material is basically intended for the subject of Fundamentals of Electrical Engineering that is developed in the second year of the common branch of undergraduate degrees. The material purchased is as follows:
  - Automatic cable stripper.
  - Electrical analyzer.
  - New bearings and o-rings to replace old bearings and seals (12x8).
  - Connection cables.
- **Material for the Disruptive Techniques laboratory**. This material is used both in the degree in Computer Engineering and in the master's degree in Computer Engineering. Specifically, 1 server was purchased with 2 Xeon E5-2620 v4 processors, 96 Gb RAM, 1 x 600Gb SAS. The detailed concepts acquired are:
  - 1 HP Proliant DL360 Jan 9, Intel Xeon E5-2620v4 processor, 16GB RAM (1x16GB Registered DIMMs, DDR4), HP Embedded 1GB Ethernet 4-port 331i Adapter network card, HP Flexible Smart Array P440ar / 2GB SAS 12G controller, SFF 2.5 "Hot Plug disks (no disks), DVD-RW, Power Supply (1) HP 500W Flex Slot Platinum Power Supply, Rack (1R) format, INCLUDES HP Easy Istall Rails.
  - 5 HPE 16GB (1x16GB) Dual Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit.
  - 1 x HPE DL360 Gen9 Intel Xeon E5-2620v4 (2.1GHz- / 8-core / 20MB / 85W) Processor Kit.
  - 1 HP 600GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3YR Warranty Hard Drive.
  - HP 3 Year Next Business day DL360 Gen9 Foundation Care Service.
- **Material for the Mechatronics laboratory**. This material is used in the specialty of Mechatronics, shared between the Degree in Mechanical Engineering and the Degree in Industrial Electronics and Automation Engineering. A high temperature furnace, the chimney and the inert gas inlet were acquired to be able to work on the practices of heat treatments and molding castings, in the subject of Materials for Mechanical Manufacturing of the third year of the GEM. In the actions carried out during 2017, the KUKA robot was purchased by the Mechatronics laboratory, To improve its performance, a guidance system for the KUKA robot by artificial vision has been purchased in 2018. Likewise, it has acquired various laboratory consumables such as a Hardware micro-controller, an interface module and pneumatic monostable valves.
- **Material for the Thermal Laboratory**. A practice test kit was purchased. This material is used mainly in the subjects of Thermal Engineering.

- **Course 18/19**
  - **Use of EPI (Personal protection equipment) in the teaching laboratories of the Degree in Technical Architecture and Building.**Implementation of a safety kit for each student and teacher and its use is mandatory in teaching laboratories. We worked together with the professors and the risk prevention service of the UdL to develop the specific kit for the degree based on the

practices to be carried out and the spaces to be used. A protocol has been defined for its use and acquisition through the UdL store.

- **Building laboratory equipment**. Acquisition of a BTC machine (Block of Compressed Earth), assuming a new teaching resource for the degree as well as at the research and promotion level. The machine is used in the course of Materials 2. A universal traction-compression press is also adquired, along with a HP computer for the universal press control.
- **Energy and Sustainability Laboratory** the following materials are acquired:
  - Edibon Internacional solar thermal energy equipment with specific computer for the management of the control system and display
  - Three-phase power line simulation equipment
  - Work bench
  - Diligent Testing Accessories
  - Sensor and actuator consumables

- **Course 19/20**
  - **Robotics laboratory**. Acquisition of a high-performance 3D printer used as a teaching tool in various undergraduate and master's subjects, as well as in workshops for high school students.
  - **Extended Reality Lab.** Two Virtual Reality equipments are acquired, HP Z VR BACKPACK G2 and HP REVERB glasses, together with the docking stations, which allow the consolidation of the Extended Reality Laboratory of the EPS-UdL, in which immersion activities are carried out in virtual reality in the Degree in Technical Architecture and Building specifically in the subjects of Graphic Expression 2 and Graphic Expression 3, in which the 3D models made with the specific digital representation software are transformed into VR format and the students can take immersions in their own designs. In the field of Architecture and Design, Virtual Reality and Augmented Reality allow to preview projects before being executed, in order to detect possible errors, improvements, interact with the environment, etc. Furthermore these technologies provides the engineer/architect with an intuitive sense of scale and proportion of the building, so it can be shown to a potential client without the need of building a scale model.
  - **Energy and sustainability laboratory.**
    - Purchase of two pneumatic benches to carry out didactic practices.
    - Computer and screen for 1500 kN lab uniaxial compression testing machine. building the Solar Energy Team
    - Workbench for the Energy and Sustainability laboratory
  - **Electronics Laboratory.**
    - Purchase of a test device: "Analog Discoverer Studio" for laboratory practice with students.
    - Purchase of 10 Mechatronics Laboratory multimeters
  - **Mechatronics laboratory.**
    - Purchase of a workbench by the mechatronics laboratory.
    - Purchase of 4 Tinkerkit Braccio robotic Arduinos for the computer science master's practices.

- **Course 20/21**
  - **Building laboratory**. Acquisition of a 1500 kN uniaxial compression testing machine.
    Purchase material for GATE expansion - EPS virtual reality equipment upgrade or 1 USB Qwerty keyboard or 3 Pavillon Gaming Mouse 200 or 1 HP E27 G4 27 "LED monitor or 1 LG 27UL650-W 27" LED monitor.
  - **Renovation of the mobile computer lab.**
    - Purchase of 7 laptops to replace the damaged computers old mobile cabinet.
    - Co-financing with the vice-rector's office infrastructure of a new mobile computer classroom (€ 13,500.00)
    - Acquisition of audiovisual and electronic material to implement virtual or mixed teaching.
  - **Thermal laboratory.** Purchase of a photovoltaic trainer mb solar panel, spotlights and didactic frame for teaching practices.

- **Acquisition of software**

The University of Lleida also carries out a centralized purchase of software licenses, which is renewed each year. The software that has been acquired associated with EPS is:

- CYPE
- Matlab
- TCQ - Budgets. Technological Institute of Construction
- Labview
- Adobe Creative Cloud Suite
- Comsol
- VMWARE player
- SiemensSCE-Student
- SIMPLIFY 3D
- TRNSYS version 18
- Equation Engineering Solver (EES)

- **Actions for the maintenance of EPS services and infrastructures and thus offer the best service to the different groups**
  - **Course 14/15**
    - **EPS Management meeting room**. A meeting room with capacity for 8-10 people has been created in the EPS Management area. A projection cannon and sound equipment with self-amplified loudspeakers were installed to leave the space with a complete multimedia equipment.
    - **Panel sponsoring companies and collaborators**. In order to give visibility to the effort that many companies make towards the Polytechnic School and at the same time show the close collaboration links between the School and the industrial and business sector of the west, the idea was to incorporate a panel of companies collaborators and sponsors at the entrance of the center.
  - **Course 15/16**
    - **Informative Screens EPS - CREA.** Updating and expansion of the EPS

information screen system that fulfills the function of informing about events. Specifically, the following tasks were carried out:

- Installation of new information management software.
- Adaptation of the information point in the EPS lobby.
- Installation of a new information point in the study area of the EPS basement.
- Installation of a new information point in the lobby of the CREA building.

▪ **Improvements in the corridors of the EPS**. With the aim of giving visibility and enhancing the teaching activities that are developed in the EPS in the different actions associated with the promotion and dissemination of the studies that the School carries out on a regular basis among high school and CFGS students, the MotoStudent Showcase and Estació de Dades IBM 3741 Showcase.

o **Course 16/17**

▪ **Adequacy of common area EPS Address**. In order to complete the comprehensive reform of the management area started in the 2015-16 academic year, in this course the "decorative" part and the furniture of this area were adapted. Basically the furniture was replaced (two armchairs and a side table) and two decorative vinyls were incorporated, one of them with the new EPS logo in relief.

o **Course 17/18**

▪ **Start of EPS vestibule adaptation**. In the first quarter of 2019, the adaptation and modernization of the EPS main lobby is scheduled to be completed. The year 2018 began to relocate the heating radiators and replace the old carpet in the entrance.

▪ **Basement floor information screen replacement**. The television, intended as an information point, located in the EPS basement study area, was damaged. It was replaced by a new TV and it was used to go from a screen of 42 "to 55"

o **Course 18/19**

▪ **Comprehensive reform of the school lobby**. An interior design project in ºthe lobby of the center has been executed. Two 44" interactive touch screens have been installed in order to allow browsing through the school's website. Hence students can consult information related to the center, degrees, timetables, exam calendars, etc. Besides, a video wall consisting of four 44" screens is also installed (offering a total projection surface of 215 x 120 cm) to disseminate various information such as new degrees, events, final master's or degree projects, project presentation and promotional information about the school. Finally, an amplifier and speakers are installed that allow for ambient sound in this area.

o **Course 19/20**

▪ The creative studio of Lleida, CactuSoup carried out the design and illustration, going through a whole process of creation and development of the interior design and institutional image project for the new laboratory of the degree in Digital Design and Creative Technologies that was installed in November 2019, the DissenyLAB. The installation

affects the rear wall part and the side glass part of the classroom.
- Enabling one of a "coworking" room. The spaces are adapted and the materials and technologies necessary for the development of shared work are acquired.
- The "vending" area on the ground floor of the EPS is fitted out with the installation of a sofa area.

- **Course 20/21**
  - A 75" TV has been adquired for the meeting room in the management area. The projector at Classroom 2.01 has been replaced.
  - Calibration and updating of the anti-impact protection systems according to the current occupational risk regulations issued by the inspectors.

During the closure period due to Covid-19, the Library and Documentation unit has disseminated the electronic resources offered to students: specifically, access to more than 200 databases, 15,000 journals and 24,000 books. Through the thematic biblioguides (http://biblioguies.udl.cat/campusvirtual) offered tips for finding information and using the virtual library.

The SIC (Information and Communication Systems) has been carrying out actions to expand the capacity of the virtual campus platform and eliminate performance problems on an ongoing basis. At the same time, it has provided the students with the tools and services to facilitate the monitoring of the subjects, such as the AppsAnywhere application, which gives access to the applications that we find virtualized in the EPS laboratories. The Teaching Activity Support and Advice unit has advised the teaching staff on the use of the most used tools of the virtual campus in online teaching.

The UdL has provided equipment (computers and tablets) and has financed mobile data to students who did not have access to continue teaching online.

For the academic year 20/21 the following improvements were implemented:
- Laboratory acquisition of laptops and audiovisual support equipment to face the distance and prevention measures imposed by Covid-19.
- Purchase of material to carry out virtual or mixed teaching:
  - 8 professional installation HDMI cable from VISION
  - 10 USB extension cables
  - 6 Logitech C930 webcam - Color webcam
  - 3 micors Blue Yeti - USB connection
  - 4 Advance RF- 31 tripods
  - 1 Compact 2-Port VGA Video Splitter Splitter Cable
  - Adequacy of spaces to guarantee distance measures and group reorganization.
  - Approach to schedules 50% face-to-face - 50% virtual, with the corresponding adaptation of schedules and grouping of groups for days of presence.
  - Preparation of spaces for recording and / or conducting classes in virtual format
  - Creation of classrooms to be able to broadcast live classes in case of confinement of the teaching staff or of any of the students during the course of the course.

5. Transparency and Documentation

Criterion 5.1 Module descriptions

The main way to disseminate information is the School website and the websites of the degrees. On these websites, all the relevant relevant information is specified, not only for each of the degrees, but for any aspect of interest to the agents involved: students, former students (alumni), future students, families, teachers, collaborating companies, etc. .
The Center has different communication tools to facilitate and guarantee that the relevant information on Bachelor's and Master's degrees reaches all stakeholders. Among these we can highlight: communication spaces through the existing virtual campus on the SAKAI platform, intranet, EPS website. Through all these means, correct communication between the Center and the groups interested in having these relevant data is guaranteed.

Attending to the different interest groups, the information is accessible specifically to:

- Future students: specific access to both the website of each degree and the EPS website.
- Current students:
    - a specific website for each degree and each master's degree, as indicated in the description of the previous sub-standard.
    - a communication channel by email addressed to all students of the School (Trobada-EPS)
    - a communication channel per degree aimed at all students of each degree
    - a communication channel incorporated in the virtual campus of each subject
    - a virtual space that allows each student to communicate with their tutor.
- Former students:
    - Specific access to the School's website,
    - Email,
    - Informative bulletin (Newsletter).
- Foreign students: specific access to the School's website.
- Employers:
    - As regards curricular and extracurricular internships and job offers, there is a specific section on the School's website.
    - Informative bulletin (Newsletter)
    - Regular meetings with the EPS management team.
- PDI:
    - Specific access to the School website and the degree website,
    - Regular meetings with the coordinator of the degree,
- PAS: Specific access to the School's website.

It should also be noted the large amount of information offered by the website of the University of Lleida (http://www.udl.cat/), which is perhaps the most natural access route for future students. From the UdL website, you can access the School website through the tab "The University: Centers and Departments" and the degree website through the "Studies" tab.

Likewise, for communication with and between the different groups that make up the EPS, there

is a communication channel by email addressed to all the PDI and the PAS of the EPS (Tots-EPS). There is also a specific communication channel with the students of the School (Trobada-EPS) with which the information is disseminated for the students, for example, the academic secretariat sends reminders of deadlines for the extension of enrollment, the enrollment of the TFG, the results of the curricular qualification, etc ...

The University has a virtual campus, also called the SAKAI platform (http://cv.udl.cat/) that contains specific spaces for:

- Each subject. This facilitates the relationship between the teacher and the student.
- Each degree. The coordinator manages this space and allows the relationship with the teaching staff and / or students jointly.
- The tutoring plan. The relationship between the tutor and the student is streamlined through this tool.

The virtual campus has several communication tools such as an email, a document repository, a list of notices and an agenda. Likewise, it allows the delivery of assessable activities by the students and manage the grades.

The websites of the programmes have been recently renewed with the aim of offering homogeneous information between all the degrees, as well as in the teaching guides of the subjects, which are offered in three languages, Catalan, Spanish and English. To facilitate the access of the different groups to the information, the website presents a tab called "information for ..." that filters and orders the contents of interest according to the user.
The following information can be consulted on the website of each degree:

- **Future students:**
  - Access roads,
  - Welcome day and orientation to the new student
  - How to get to the center.
- **Curriculum:**
  - Objectives and competences
  - Structure of the plan and teaching guides
  - Teaching guides from previous courses
  - Cross matter
  - Final degree project
  - Third language regulations
  - Faculty
- **Calendars and exams:**
  - Academic calendar
  - Schedules
  - Exams
- **Academic practices:**
  - External academic practices of the UdL
  - Normative
- **Mobility:**
  - Academic mobility and programmes
  - Maximum of valid credits
  - ECTS system
  - Degree mobility programmes

- **Academic practices:**
  - External academic practices of the UdL
  - Normative
- **Scholarships and grants**
- **Normative**
  - Academic regulations of the UdL
  - Regulations of the center

Regarding the teaching guides, the following information can be consulted for each subject of the degree.

- Subject code
- Coordinator, teaching staff of the subject and contact address
- Number of credits
- Distribution of the teaching load face-to-face class / autonomous work
- Theoretical / practical credit distribution
- Language of delivery
- Academic goals
- Competencies
- Fundamental contents of the subject
- Methodological axes of the subject
- Course development plan
- Evaluation system
- Bibliography and information resources
- Additional information

On the other hand, on the degree website there is also the tab "the degree in figures" where you can consult data and indicators of the degree disaggregated by sex. More specifically, in the degree dossier, information can be obtained disaggregated by sex regarding:

- Registration and access route
- Access note
- Teaching organization
- Teaching hours by type of teaching staff
- Performance tax
- Efficiency and graduation
- Cohort follow-up

Every June, there is an annual review of the School's websites and the degrees. This review process is framed within the SGIQ procedures and has been consolidated as a very useful and efficient means to ensure that the information appears complete and up-to-date. so that the quality office makes a detailed review of the School's websites and an Excel sheet is generated with all parameters checked. This Excel is later verified by the management team and coordinators of the EPS, so that, annually and before the enrollment process, the School's websites are set up so that all the information is truthful, complete, up-to-date and accessible. The team of coordinators and the management of the School work on this purpose in a coordinated way, holding meetings to share the aspects to be improved, together with the

communication technician for management support. This way of working allows detecting those cross-cutting issues on the webs, which often depend on other services of the university and not on the School or the coordinator.

Criterion 5.2 Diploma and Diploma Supplement

Once the student has passed the university studies leading to obtaining a specific official qualification (Bachelor, Master or Doctorate) and, in the case of degrees, having proven knowledge of a third language, the student must apply for the title through the Electronic Office of the University and make the payment of the corresponding fees.

The price of the fees is set for each academic year by the Official Pricing Decree of the Generalitat of Catalonia.

Once the application for the issuance of the official title has been processed, all the documentation is checked by the Secretariat of the center and a receipt of the title is sent to the interested party, also electronically. Said receipt together with the payment of the fees will be the document proving your degree until the official degree is obtained. Alternatively, you may request the issuance of a replacement certificate of the title. This certificate has the same validity as the official degree and is issued on a provisional basis at the express request of the student. Provisionally accredits the passing of certain official studies and that, having paid the fees, their final issuance is pending.

The secretary of the center will inform the graduate when they can pick up the title.

Official degrees will be issued, on behalf of the King, by the Rector of the University of Lleida, in accordance with the requirements regarding their format, text and issuance procedure are established in current regulations.

The issuance of titles is regulated by the Royal Decree 1002/2010, of August 5, on the issuance of official university degrees.

Once your request for the issuance of an official title has been processed, the center will proceed to generate the receipt of the title, which will be available in your electronic file.

According to current legislation, the title, once issued, must be personally withdrawn by the interested person, presenting the corresponding supporting document (DNI if it is a Spanish person, identity card if it is a national of an EU country or passport if it is a non-EU nationality).

If the holder cannot collect the title himself, he can authorize another person, always by means of a power of attorney, to remove it on behalf of the person concerned.

The European Diploma Supplement (SET) is the document that accompanies the official university degree and valid throughout the national territory with unified, personalized information for each university graduate, on the studies completed, the results obtained, the professional skills acquired and the level of your degree in the national higher education system. This document is issued by the center according to current regulations.

The SET is regulated by the Royal Decree 1002/2010, of August 5, on the issuance of official

university degrees and by the Royal Decree 22/2015, of January 23, which establishes the requirements for issuing the European Supplement to the degrees regulated in Royal Decree 1393/2007, of October 29, which establishes the organization of official university education and modifies Royal Decree 1027/2011 , of July 15, which establishes the Spanish Qualifications Framework for Higher Education.

The Ministry has published some guides to regulate its expedition
Bachelor's degree SET Expedition Guide
Master SET Expedition Guide

Criterion 5.3 Relevant rules

All the regulations that affect EPS qualifications are:

- Academic regulations of degrees and masters of the UdL (enrollment, permanence, evaluation and qualification, curricular qualification)
- Regulations for Tutored Practices in the Company,
- Regulations for End-of-Degree and Master's Projects,
- Academic Framework of the EPS,
- Regulations on double degrees,

All of them can be found in the Academic Information section of the School's website, in the specific section of Regulations (http://www.eps.udl.cat/info_acad/normatives/normatives.html).

These regulations have been designed after analysing and considering the needs and requirements, so that they entail a positive impact on the development of the School's teaching.

Among the regulations mentioned, two of them are specific to the EPS and have a positive impact on the results of the qualifications: the curricular qualification and the Academic Framework of the EPS.

The **Curricular qualification** aims to determine whether:

- a student has globally acquired the knowledge necessary to pass each of the curricular blocks, and
- a student will be able to complete the programme within a reasonable period of time.

There are two curricular blocks in each Bachelor's Degree:

The Degree Start Curricular Block includes all the compulsory subjects of the first year

The Degree Completion Curricular Block includes all the compulsory subjects of the second, third and fourth years. Optional and specialization subjects, Internships and Bachelor's thesis will not be included.

The Evaluation Committee of the Start Curricular Block is responsible for applying the criteria approved in the Regulations, and assess the level of training acquired by each student, extracted from the analysis of the subjects that make up the curriculum block. It will also establish which students pass the Start curricular block, what is the mark that must appear in the minutes and transcript of each student, and prepare a report with the results of the curricular evaluation, to be signed by the director of the Center.

Students in the Completion Curriculum Block, who meet the conditions approved in the Regulations for this Block, may make a request addressed to the director of the Center so that they can be compensated for the corresponding subjects. The Curricular Qualification of this block will be the result of applying the criteria established in the approved Regulations.

The student will be considered to have passed a block and will be compensated for the subjects not passed, as long as he / she meets the criteria established in the regulations or when the Curricular Commission of the Block so decides.

The **Academic Framework of Degrees and the Academic Framework of Masters** of the EPS (http://www.eps.udl.cat/info_acad/normatives/MarcAcademicEPS.html) intend to establish the general bases for organizing teaching. Currently, the versions approved by the School Board in July 2014 are used, which result from the improvement of previous versions, started from the 2009/10 academic year. Among others, these documents establish bases to set the academic calendar and how to carry out the sequence of the different evaluation activities, from the written tests to the delivery of practices. Bases are also established on the number of evaluation activities and their weight in the final grade of a subject. In this way, continuous evaluation has been standardized in all EPS studies without overwhelming the student with these evaluation activities.

All these regulations are submitted to periodal updates. The most significant changes and improvements introduced recently are:

- **Approval of the Methodological Framework of Dual Training**.
  With the implementation of Dual Training in some programmes, a set of protocols and work standards have been defined and established that are currently included in procedure PC 008: management of dual training in the masters of thePolytechnic School (6_01_EPS_PC008) and that has been reinforced with the approval in 2021 of the Methodological Framework for Dual Training for bachelor's and master's degrees at EPS (6_02_EPS_Marco Metodologico Formación dual.pdf). The methodological framework of dual training includes aspects such as the organization, management, monitoring, evaluation and qualification of Dual Training in the bachelor's, master's and double-degree degrees taught at the EPS, following the general guidelines approved in the Regulations of the UdL
  In addition, with the collaboration of the legal services of the University of Lleida, the following documents have been drawn up, which are included in the indicated protocols:
  - A specific dual training agreement model that sets out the specificities of dual training with respect to the rest of the practices at the University of Lleida.
  - The tutor's guide, which includes the obligations and duties of dual training tutors (see evidence).
  - The learning notebook in three languages: English, Spanish and Catalan (see evidence)

- **Adaptation of the Curricular Qualification Regulations**
  In 2018 and 2019, two degrees of 180 ECTS have been implemented. Therefore, the Curricular Qualification Regulations has been adapted to differentiate the maximum number of credits that a student can compensate in the overall degree depending on whether he is pursuing a degree of 180 ECTS or 240 ECTS.

- Due to the crisis caused **by Covid-19**, on April 2020 the Study Comission center approved two documents in order to provide guidelines to adapt to lockdown situation:
  - The Guidelines for the Adaptation of the Online Assessment, following the

indications of agreement No. 33/2020 of the Governing Council of February 18, 2020, which approves the Regulations for the assessment and qualification of teaching in degrees and master's degrees from the UdL. The document includes all the adaptations made to maintain teaching and non-face-to-face evaluation, the procedure for modifying the teaching guides to reflect the changes, as well as the criteria for alternative evaluation.

- The EPS Procedure for the Defense of TFGs and TFMs online through the videoconference tool of the virtual campus, ensuring that the session is public and disseminated through the dissemination channels used by the Center.

- **Introduction of gender perspective**

  In relation to the gender perspective, Law 17/2015, of July 21, on the effective equality of women and men, in its article 28.1 requires universities to "introduce the gender perspective in a transversal manner and of the studies on the contribution of women throughout history in all areas of knowledge and in academic and research activity, which must be included in the curriculum of undergraduate and postgraduate programmes.

  In the implementation of this law, and in accordance with the indications of AQU Catalonia to display the gender perspective in all degrees, the UdL has approved, in the Governing Council of December 17, 2020, a transversal competence for degrees and Master's degrees that the incorporation of this perspective proposes: "Apply the gender perspective to the functions of the professional field".

  The EPS included this competence in all degrees and masters during the first quarter of 2021, incorporating the learning outcomes that will specify the deployment of the transversal competence. For the preparation of the learning results, the documentation published by the Xarxa Vives commissions and by the AQU Catalunya Guide has been used.

6. Quality Management: Quality Assessment and Development

Criterion 6 Quality management: quality assessment and development

The EPS has an Internal Quality Assurance System (SGIQ) that collects the activities carried out in the center with the aim of guaranteeing the continuous improvement of the quality of the training offer of the center, following the guidelines and standards for quality assurance in the European Higher Education Area (EHEA) and the AUDIT programme.

The document that serves as the basis for the SGIQ of the center is the UdL Quality Manual and the documentation related to the government of the University (Statutes and general regulations) and the internal regulations of the Polytechnic School have been taken into account.

The student body, the teaching staff, and the administration and services staff are the main interest groups in the School's SGIQ. Their participation is guaranteed since they are represented or are part of the collegiate bodies of the University, such as the University Senate, the Governing Council and the main commissions, and of the collegiate bodies of the Polytechnic School, such as the School Board or the study commissions.

Other interest groups such as employers, public administrations and society in general are represented within the structure of the university through the Social Council. Regarding participation in the School, the EPS organizes meetings with the different social agents involved in their degrees: companies, professional associations, business associations, public administrations ... These meetings therefore guarantee the involvement of society and future employers in the School's proposals related to its training offer. In addition, through the external internship programmes, which the UdL and the students put in contact with the companies in their environment, it allows companies from various sectors related to the studies taught at the center to participate.

The director of the School is the main person in charge of the SGIQ of the EPS. The director or director of the EPS appoints the coordinator of Quality of the Center, preferably among the members of the team of the center that represents the director or director in the follow-up of the SGIQ of the School.

During the 2019-20 academic year, the UdL requested the evaluation of the implementation of the transversal procedures of the Internal Quality Assurance System, which the center admits as its own. The result of the audit was favorable and opens the door to the certification of the implementation of the SGIQ at the center level, scheduled for 2022. This first stage has also involved the deployment of a set of indicators that allow controlling the procedures and defining a specific Improvement Plan within the Programme Budget developed by the UdL Strategic Plan.

The SGIQ of the UdL follows the guidelines of the procedure "PG24 Define and develop the policy and objectives of improvement of the university" for the revision of the SGIQ itself, as well as the associated improvement Plan.

The EPS admits as its own procedures the general procedures "PG02 Design training programmes", "PG03 Review and improve official training programmes" and "PG26 Accredit official qualifications", developed within the framework of the SGIQ.

These procedures are subject to periodic updates led and managed by the UdL's Teaching Quality and Planning Unit, with the aim of adjusting to changes in needs and regulations, thus establishing a system of continuous improvement of these SGIQ procedures. The history of the dates and reasons for these reviews can be consulted at the beginning of each of the procedures.

The purpose of these procedures is to establish the guidelines to be applied in the design and approval of new undergraduate and graduate degrees adapted to the EHEA, as well as the subsequent monitoring and review of their results in order to guarantee the quality of official training programmes. , and finally its accreditation.

In all of them, special emphasis is placed on the participation of all the agents involved. Thus, in the "Stakeholder participation" section, present in all these procedures, it is clearly and transparently defined how this requirement is met in each case.

- **Updating of the PG02, PG03 and PG26 procedures.** During 2020, the procedures were reviewed and updated by the Teaching Quality and Planning Unit together with the responsible Vice-Rectors.
- **Restructuring of the Improvement Plan.** Various changes have been introduced in the organization of the Improvement Plan: the year in which the improvement action is introduced is identified, it is related to the general procedure to which it is associated, it is identified whether the action corresponds to the center in general or to a specific degree and the origin of the action is indicated (monitoring report, accreditation, center agreements, ..). In the same document, a tab has been created with the "Completed Actions" and their corresponding follow-up.
- **Indicator analysis.**Annually, the management of the center together with the technicians of the Quality Office assess the indicators related to the procedures. Since 2020, the number of indicators has been expanded, which makes it possible to propose improvement actions based on the analysis of the information.
-

The gender perspective has been incorporated into the processes mentioned above, introducing the disaggregation by sex in part of the information. The center has participated in the deployment of the UdL Equal Opportunities Plan. Through the procedure PG03 Review and improve the training programmes, the transversal competence "Applying the gender perspective to the functions of the professional field" has been introduced, approved by the UdL Academic Organization Commission on December 17, 2020 in all degrees .

Regarding the impact of the COVID-19 pandemic, from the beginning the Directorate of the EPS, following the indications of the Vice-Rectorate for Academic Planning, adapted to:

- Plan again all pending teaching using, as far as possible, the online methodology, offering virtual classes respecting the original timetables and the time bands established for each subject.
- Sizing and coordinating academic activities taking into account the workload of each subject and the set of subjects that were being studied.

- Maintain regular contact with the students to ensure that they were aware of the proposed novelties and that they allowed their observations to be collected in order to help improve the planning of changes and avoid possible overlaps.

In the case of external practices, as of the declaration of the alarm state, the face-to-face practices of students of all EPS degrees were suspended. Only in the cases that the typology of the functions to be performed allowed it, were they replaced by teleworking. The external practices were restarted with the lifting of the state of alarm. Before resuming the activity, it was necessary to sign a COVID declaration by the student, the company tutor and the University tutor where the agreement of the parties was recorded to return to the face-to-face modality of the practices.

Since March 13, 2020, no face-to-face meetings have been held with students and all communications have been made by mail or videoconference through a new space on the virtual campus called "Meetings with PTE students".

The Study Commission of April 16, 2020 approved the document "Guidelines for the adaptation of the online assessment" which included all the changes applied taking into account the procedures PG22 Program the Annual Teaching Plan, PG29 Manage external academic practices and PG30 Plan and develop learning methodologies.

In the same Study Commission, the "Procedure for modifying the teaching guides" was approved, which included how to introduce addenda to reflect the changes introduced and to be able to monitor them.

The monitoring of the qualifications is carried out on an ongoing basis each academic year and is articulated mainly through the following mechanisms:

- Monthly meetings of all the coordinators of degrees and masters with the heads of studies.
- Meetings of the coordinator with the teaching staff of each degree at the end of each academic year.
- Periodic meetings of the coordinator with the students.
- Meetings of the EPS management team with different representative groups of the Center such as: the Student Council, the Heads of the Departments attached to the EPS, representatives of the industrial sector and the person in charge of the Academic Secretariat of the EPS, among others.
- Contributions and suggestions from the tutors of the UdL Tutoring Plan (Néstor Plan) based on individual or group tutorials with the students.
- Weekly meetings of the Center's Management Team.
- Specific sessions of the management team for the review and evaluation of the completed course (month of July), in which the objectives of the following course are defined.

This constant work throughout the course allows EPS to carry out continuous management in which the aspects to be improved can be precisely detected and can be addressed with diligence, thus contributing to the continuous improvement of all processes.

In addition, and specifically for the preparation of the monitoring report of the degrees, during the months of June / July of each course, the monitoring data of each of the degrees is evaluated, which the Quality and Planning unit makes available to available through DATA, the results are analyzed and discussed in the meetings of the Coordinators Team, then proposing the improvement actions that they want to carry out for the following year. The result of this process is the preparation of an annual Improvement Plan in which all those improvement actions that are intended to be tackled during the following academic year are specified. This document is discussed and approved by the Studies Commission and by the Studies Commission of the corresponding Official Postgraduate Programme (POP).

Since the 16/17 academic year, the Quality and Teaching Planning unit has established the monitoring of the SGIQ through indicators, which have been expanded during the 19/20 academic year, in such a way that the quality technicians have been brought together with the EPS management team. the results obtained for the different defined indicators are discussed, are valued and specific proposals for improvement are established. This procedure is valued very positively as it encourages participatory and consensual decision-making, as well as allowing the detection of strong points and areas for improvement.

Finally, it should be noted that annually, the School management meets with the Vice-Rectorate for Academic Organization and Planning, as well as with the technicians of the Quality and Planning unit, with the aim of defining those strategic improvement actions that will be linked to the Budget of the School in the following academic year, through the signing of the Center Agreements.

The Improvement Plan systematically includes the process and timing of the achievement of the different planned actions and is approved by the Undergraduate Studies Commission and the Official Postgraduate Programme Studies Commission. The constitution of these commissions is defined by the SGIC and all groups are represented.

All the information is available in the Center's Portfolio, a document repository that contains all the information and documents generated in the quality assurance process of all the centre's degrees.

IMPROVEMENT PLAN

Improvement plan for Master's degrees submitted for evaluation

The following Improvement Plan includes the monitoring of the actions that are currently being developed and the proposal of new actions that arise from the analysis carried out in this report.

Proposed Origin	Year Proposal	TITLE / CENTER	PC	Objectives Achieved	Improvement Actions	Modification. Memory of the title Yes / No	Responsible for the action	Implementation calendar
Accreditation report / IDA	2019	Center	PG 30 Plan and develop teaching methodologies	Regulate and organize the new procedures originated by the implementation of Dual Training	Develop regulations for Dual Training that regulate the process in all its areas	No	Heads of Studies	1st Semester 2020 Course 20/21
Follow-up report	2019	Center	PG 02 Design training programs	Increase the offer of double degrees	Explore the feasibility of a double degree for the Degree in Engineering in Industrial Organization and Logistics and for the Degree in Chemical Engineering	No	Head of Studies / Degree Coordinators	Course 19/20 Course 20/21
Follow-up report	2019	Center	PG 06 Capturing future students	Consolidate the single entry into undergraduate degrees in the industrial branch	Consolidation of the unification of criteria and contents in the common subjects of the five branches of Industrial Engineering.	No	Head of Industrial Studies	Course 19/20 Course 20/21
Follow-up report	2019	Center	PG 06 Capturing future students	Give visibility to the Igualada Campus	Send the School Newsletter to the addresses of secondary schools and institutions in the Igualada area	No	Management of the Center	Course 19/20 Course 20/21
Follow-up report	2020	Center	PG 28 Welcoming and guiding students	Improve student representation	Consolidate the Student Council of the Igualada campus and renew the Board of the Lleida Campus Council.	No	Management of the Center	2nd Semester 2020

Follow-up report	2020	Center	PG 06 Capturing future students	Give visibility to the Igualada Campus	Improving the promotion campaign for the Igualada Campus; including the centers of cycles of formative degrees and intensifying the actions in the counties of Osona, Baix Llobregat, Penedès and Conca del Barberà.	No	EPS address	Course 20/21
Follow-up report	2020	Center	PG 06 Capturing future students	Disseminate degrees in the area of influence	Promote the school and its degrees through the presentation of projects.	No	Deputy Director of Students, Promotion and Quality	Course 20/21
Follow-up report	2020	Center	PG 28 Welcoming and guiding students	Improve student representation	Improve student representation; promote classroom delegates of all degrees and courses.	No	Deputy Director of Students, Promotion and Quality	Course 20/21
Follow-up report	2020	Center	PG 23 Publish information and report on training programs	Increase participation in surveys	Send emails to graduates to fill out satisfaction surveys	No	Management of the Center	November 2020
Follow-up report	2020	Center	PG 06 Capturing future students	Promote technological vocations	Start a Talent Program. It is a program aimed at high school students with good academic results and aims to expand their training	No	Deputy Director of Students, Promotion and Quality	Course 20/21
Follow-up report	2020	Center	PG 06 Capturing future students	Disseminate the degrees of the School in the area of influence	Look for an EPS promotion coordinator.	No	Management of the Center	Course 20/21
Follow-up report	2020	Center	PG 29 Manage external academic internships	Promote actions that enhance the level of interaction with the business environment generating new synergies	Analyze the desirability of activating a business advisory board.	No	External Internship Coordinator	Course 20/21
Follow-up report	2020	Center	PG 28 Welcoming and guiding students	Improving the sub-standard 5.1 Academic guidance services adequately support the learning process and vocational guidance services facilitate	Promote the Progateway program and incorporate GATE into the program	No	Management of the Center	Course 20/21

				incorporation into the labor market				
Follow-up report	2020	Center	PG 28 Welcoming and guiding students	Improving the sub-standard 5.1 Academic guidance services adequately support the learning process and vocational guidance services facilitate incorporation into the labor market	Promote a monograph on employability for students of 4t.	No	External Internship Coordinator	2nd Semester 2020
Follow-up report	2020	Center	PG 08 Manage outgoing mobility students	Encourage the internalization of our students	Perform WWEPS virtually.	No	Deputy Director of International Relations	Course 20/21
Follow-up report	2020	Center	PG 32 Manage complaints and suggestions (centers)	Consolidate the relationship between the school, students and alumni	Explore the possibility of using Linkedin to consolidate the relationship between students and school	No	School Management	Course 20/21
Follow-up report	2020	Center	PG 06 Capturing future students	Disseminate degrees in the area of influence	Improve the number of followers on the networks.	No	Management of the Center	Course 20/21
Follow-up report	2020	Center	PG 32 Manage complaints and suggestions (centers)	Systematize the collection of complaints and suggestions	Review procedures and protocol for handling student complaints.	No	Head of Studies / Coordinators	2nd Semester 2020
SIGQ monitoring	2020	Center	PG 26 Accredit the qualifications	Highlight the quality of the degrees taught and give it international recognition	Renewal of ASIIN labels: EUR-ACE for GEM, GEEIA, GEES and MEInd degrees EURO-INF for GEI and MEInf degrees	No	Management of the Center	Course 20/21
SIGQ monitoring	2020	Center	PG 26 Accredit the qualifications	Prepare the institutional accreditation of the center	Formalize the quality policy of the center in a document	No	Management of the Center	1st semester 2021

SIGQ monitoring	2020	Center	PG 15 Develop and execute the training plan for academic staff	Encourage teaching improvement and innovation actions by applying teaching methodologies and sharing good practices adapted to teaching on the occasion of the changes brought about by COVID-19	Organize seminars for teachers to apply new teaching methodologies and share teaching experiences related to the transition to virtual teaching	No	Heads of Studies	February 2021
Center agreements	2021	Center	PG 03 Review and improve training programs	Design measures to improve student permanence.	Perform an analysis of the results of the dropout rate of the degrees with the highest rates	No	Deputy Director of Students, Promotion and Quality	In 2021
Center agreements	2021	Center	PG 03 Review and improve training programs	Identify the extreme cases of student dissatisfaction with the subjects	Analyze the information of the subjects with values lower than 2.5 and propose measures	No	Center address	In 2021
Center agreements	2021	Center	PG 08 Manage outgoing mobility students	Design an administrative mobility management procedure.	Write the center procedure	No	Deputy Director of International Relations	In 2021
Center agreements	2021	Center	PG 31 Review and improve the internal quality assurance system	Review the IQAS Manual of the centers	Approve the revision of the centre's IQAS Manual	No	Deputy Director of Students, Promotion and Quality	In 2021
Center agreements	2021	Center	PG 32 Manage complaints and suggestions (centers)	If the confinement is maintained, set up virtual meetings with students to collect complaints and suggestions regarding the quality of the degrees.	Organize meetings with students in 6 degrees of the center (degree and master)	No	Deputy Director of Students, Promotion and Quality	Course 20/21
Follow-up report	2020	Center (COVID-19)	PG 22 Schedule the annual teaching plan	Report on adaptations in the curriculum resulting from the pandemic	Coordinators-students meeting to explain the measures taken due to the pandemic and the adaptations of schedules and teaching activity.	No	Head of Studies / Coordinators	September 2020

Follow-up report	2020	Center (COVID-19)	PG 22 Schedule the annual teaching plan	Provide the center with tools and resources to maintain the quality of teaching during the COVID-19 situation	The teaching guide will reflect the specific safety measures of each subject for the realization of the practices in the laboratory.	No	Management of the Center	September 2020
Follow-up report	2020	Center (COVID-19)	PG 27 Manage material resources for teaching	Provide the center with tools and resources to maintain the quality of teaching during the COVID-19 situation	Acquisition of a laboratory for laptops and audiovisual equipment to support the exceptional situation experienced as a result of the Covid-19	No	Management of the Center	September 2020
Follow-up report	2020	Center (COVID-19)	PG 27 Manage material resources for teaching	Implement protection measures against COVID-19	Adequacy of spaces to ensure distance measurements.	No	Management of the Center	September 2020
Follow-up report	2020	Center (COVID-19)	PG 06 Capturing future students	Implement protection measures against COVID-19	Carrying out workshops and promotional activities in virtual format.	No	Management of the Center	Course 20/21
Accreditation report	2019	MEInd	PG 06 Capturing future students	Promote actions to attract both national and international students	Establish leveling electives for students of the degrees of the industrial field that the EPS is launching that are enrolled in the MEInd: GEES, GEOIL, GEQ	Yes	Director of Studies	2nd Semester 2020
IDA	2020	MEInd	PG 03 Review and improve training programs	Improve the quality of the training program	Ensure that the competency profile of the MEInd program is the same for students with dual training as traditional training	No	Head of Industrial Studies / Degree Coordinator	Course 20/21
IDA	2020	MEInd	PG 30 Plan and develop teaching methodologies	Improve the quality of the training program	Make available to students in dual training the materials that are worked on in class subjects	No	Degree coordinator	Course 20/21
IDA	2020	MEInd	PG 03 Review and improve training programs	Improve the quality of the training program	Review the timing of the acquisition of skills, in the case of compulsory subjects in dual training	No	Degree coordinator	Course 20/21

Accreditation report	2021	MEIND	PG 06 Capturing future students	Promote actions to attract both national and international students	Consolidate the registration for the Master in Industrial Engineering	No	Head of Studies / Degree Coordinator	Course 21/22
Follow-up report	2020	MEIND / MEINF	PG 03 Review and improve training programs	To promote the prestige of the master's degrees in Industrial Engineering and Computer Engineering	Promote meetings with teachers to determine actions that increase the prestige of master's degrees	No	Degree coordinator	Course 20/21
Follow-up report	2020	MEIND / MEINF	PG 13 Identify needs and select academic staff	Increase the prestige of master's degrees	Call to attract the participation of international teachers online.	No	Management of the Center	Course 20/21
Accreditation report	2019	MEInf	PG 06 Capturing future students	Promote actions to attract both national and international students	Promote access to MEInf for students in new ICT degrees at EPS. The aim is to study and establish the necessary training complements to give access to the MEInf, for the new degrees that have been created GTIDIC, GDDTEC	No	Director of Studies	2nd Semester 2020 Course 20/21
Accreditation report	2021	MEINF	PG 02 Design training programs	Improve the quality of the training program	Restructuring of the Master's Degree in Computer Engineering	Yes	Head of Studies / Degree Coordinator	Course 21/22
Accreditation report	2021	MEINF	PG 30 Plan and develop teaching methodologies	Promote actions to attract both national and international students	Offer in hybrid format some subjects of the Master	No	Head of Studies / Degree Coordinator	Course 21/22
IDA	2020	MEInf / MEInd	PG 03 Review and improve training programs	Improve the quality of the training program	Ensure that the competencies and learning outcomes indicated in the teaching guide of the subjects (especially those compulsory in the MEIND) are 100% covered in the training	No	Head of Industrial Studies	Course 20/21
IDA	2020	MEInf / MEInd	PG 03 Review and improve training programs	To guarantee the adequacy of the teaching staff without university ties who teach in dual training	Intensify actions to ensure that companies involved in dual training are aware of their role as co-trainers (along with the university) and not just as employers	No	Management of the Center	Course 20/21

1. Annex: Correspondence between the AQU Catalunya and ASIIN standards

ASIIN		**AQU Catalunya**
1. The Degree Programme: Concept, content & implementation	**Notes**	**1. Quality of the training programme**
1.1 Objectives and learning outcomes of a degree programme (intended qualifications profile)		**1.1. The programme's competence profile meets the requirements of the discipline and complies with the requiredlevel of study according to the MECES.**
1.2 Name of the degree programme **1.3 Curriculum**		**1.2. The curriculum and structure of the curriculum are consistent with the programme's competence profile and learning outcomes.**
1.4 Admission requirements		**1.3. Students who are admitted have an admission profile that is suitable for the programme and the number of students is consistent with the number of places offered.**
	ASIIN criterion 6	**1.4. The existence of effective teaching coordination mechanisms for the programme.**
	ASIIN criterion 5.3	**1.5. The different regulations are complied with in the correct way and this has a positive impact on the programme outcomes.**
2. The Degree Programme: Structures, Methods & Implementation		
2.1 Structure and modules		
2.2 Work load and credits		
2.3 Teaching methodology		
2.4 Support and assistance		**5. Effectiveness of learning support systems**

		5.1. The academic guidance services provide adequate support for the learning process, and the professional guidance services facilitate entry into the labour market. 5.2. The available physical resources are adequate for the number of students and the characteristics of the programme.
3. Exams: System, Concept & Organisation		**6. Quality of programme (learning) outcomes**
		6.1. The learning outcomes achieved meet the expected training goals and the MECESlevel of the degree programme.
		6.2. The training activities, the teaching methodology and the assessment system are suitable to ensure the achievement of the expected learning outcomes.
		6.3. The values for the academic indicators are adequate for the characteristics of the programme.
		6.4. The values for the graduate labour market/destination indicators are adequate for the characteristics of the programme.
4. Resources		4. Suitability of teaching staff for the training programme
4.1 Staff		4.1. The teaching staff meet the qualifications requirements for programme delivery in the faculty, and they have sufficient and recognised teaching, research and, where applicable, professional experience.
		4.2. There are sufficient teaching staff in the faculty, and staff assignment is adequate for them to carry out their duties and attend the students.
4.2 Staff development		4.3. The HEI offers support and opportunities for enhancing teaching quality in the faculty.

4.3 Funds and equipment		
5. Transparency and Documentation		**2. Relevance of the public information**
5.1 Module descriptions		**2.1. The HEI publishes truthful, complete, up-to-date and accessible information on the characteristics of the degree programme and its delivery.**
	ASIIN criterion 6	**2.2. The HEI publishes information on the academic and satisfaction outcomes.**
	ASIIN criterion 6	**2.3. The HEI publishes the IQAS which forms the framework of the degree programme and the monitoring and accreditation outcomes of the degree programme.**
5.2 Diploma and Diploma Supplement		
5.3 Relevant rules	AQU subestàndard 1.5	**1.5. The different regulations are complied with in the correct way and this has a positive impact on the programme outcomes.**
6. Quality Management: Quality Assessment and Development		**3. Efficacy of the programme's internal quality assurance system**
		3.1. The implemented IQAS has processes which ensure the design, approval, monitoring and accreditation of the degree programmes.
		3.2. The implemented IQAS ensures the collection of information and of outcomes relevant to the efficient management of the degree programmes, especially including the academic and satisfaction outcomes of the stakeholders.
		3.3.The implemented IQAS is periodically reviewed and generates an enhancement plan that is used for its continuous enhancement.