UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH

Escola Superior d'Enginyeries Industrial,
Aeroespacial i Audiovisual de Terrassa

Internal Quality Assurance System (IQAS) Manual

Terrassa School of Industrial, Aerospace and Audiovisual Engineering (ESEIAAT).

Terrassa, September 2024

INTERNAL QUALITY ASSURANCE SYSTEM IQAS

Terrassa School of Industrial, Aerospace and Audiovisual Engineering (ESEIAAT)

205. ESEIAAT INTERNAL QUALITY ASSURANCE SYSTEM MANUAL

Person responsible for the process	Approved by	Agreement no.	Date of approval
Deputy director of Quality	School Board	J.ESEIAAT/2024/04/02	09/10/2024

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INTRODUCTION

This document presents the internal quality assurance system (IQAS) for degrees at the Terrassa School of Industrial, Aerospace and Audiovisual Engineering. The manual is divided into three sections.

- First section: the Terrassa School of Industrial, Aerospace and Audiovisual Engineering (ESEIAAT) is presented briefly, including the degrees it teaches, the teaching departments and its information channels.

- Second section: the School's organisation chart is presented and the single-member and collegial governing bodies are described, as well as the responsibilities for quality and stakeholders.

- Third section: the structure and scope of the processes that constitute the current IQAS are explained, the process map relating to cross-cutting activities at the UPC. A brief description is given of how the documents generated by the IQAS are managed.

1. THE SCHOOL

Photograph 1. Facade of the TR-1 building

The **Terrassa School of Industrial, Aerospace and Audiovisual Engineering (ESEIAAT)** is a public higher education and research school of the Universitat Politècnica de Catalunya (UPC) on the Terrassa Campus. It was founded on 24 November 2015 when two schools with over one hundred years of history were joined: the Terrassa School of Industrial and Aeronautical Engineering (ETSEIAT) and the Terrassa School of Engineering (EET).

The joining of two historic schools with recognised experience and prestige has led to the **largest UPC school**, a modern school that is connected to the world and has a vocation for innovation and service and the will to maintain itself as a point of reference nationally and consolidate itself internationally in the field of university education. Its main aim is to produce graduates who have the capacity for leadership and innovation in the multidisciplinary fields of engineering.

This is the start of a project for the future that is **committed to training engineers** who are equipped to face the challenges of a changing world undergoing continuous transformation and determined to act as an agent and driver of economic and social progress that contributes to society's development.

The School teaches a wide range of **degrees in industrial, aerospace and audiovisual engineering**. It offers many possibilities for academic careers to be adapted to the interests and needs of students from diverse backgrounds.

The ESEIAAT works with the support and complicity of the territory and its surroundings. The School is strongly rooted in the city of Terrassa and has longstanding ties to the business sector. Students have the option to learn by working through the university-business educational cooperation programme and activities that foster graduate employment.

The institution acts as a platform to support research and aims to serve the society of the future with knowledge creation, development and the application of technology to the needs of the public.

1.1. A point of reference in industrial engineering

The degree offerings are interdisciplinary and include the sequential programme of the bachelor's degree in Industrial Technology Engineering and the master's degree in Industrial Engineering, which confers the skills that qualify graduates to practise as industrial engineers. The School also offers bachelor's degrees that qualify graduates as technical engineers: Electrical Engineering, Industrial Electronics and Automatic Control Engineering, Mechanical Engineering, Chemical Engineering and Textile Technology and Design Engineering. It also teaches the bachelor's degree in Industrial Design and Product Development Engineering. The offerings in industrial engineering extend to face-to-face and blended learning master's degrees: Automatic Systems Engineering and Industrial Electronics; Industrial Scheduling; Textile Technology and Design; Paper and Graphics Technology; Research in Mechanical Engineering; and Industrial Design. Double degree programmes are also offered at the institution and with international institutions.

These degrees offer comprehensive training based on teaching quality and continuous learning that emphasises the acquisition of scientific and technical knowledge and professional competencies, as well as the personal development of the skills that society requires.

1.2. A point of reference in aerospace engineering

The activity of aerospace engineers covers the entire aerospace sector, both the production side (design, development and manufacture) of all kinds of aerospace vehicles, the various elements they are composed of and their operation and maintenance, and the logistics side associated with their use and operation, including airport easements and air navigation and traffic (aerospace control, management and exploitation, which include machinery and software for aerospace support systems and their interrelation). Their activity may also take place in the framework of aerospace infrastructure, the focus of which is the design, construction, use and maintenance of the infrastructure that supports aerospace activity. They are professionals who are trained to apply aerospace science and technology and develop new technologies, and they are fully qualified to certify aerospace vehicles and aerospace logistics systems, particularly airports and air navigation systems.

1.3. A point of reference in audiovisual systems engineering

ESEIAAT is pioneer in this field, continuing the heritage of Telecommunications Engineering, specialising in sound and image. The degree in Audiovisual Systems Engineering combines the study of telecommunications applied to audio and video with advanced communication technologies like the

transmission for Internet and streaming services. Students also work at the production and audiovisual post-production and other communication systems, as well as acoustics and electronic devices, broadcast, interactive multimedia and artificial intelligence technologies.

The program includes a strong practical component, enabling students to use squads of production equipment, editing software and audiovisual technologies of avant-garde. In addition, knowledge in telecommunications networks, signal processing and compression technologies are put into practice, with applications such as video, sound and television editing, and the installation of audiovisual systems for industrial and commercial surroundings.

With a high labour insertion rate, this position is designed to prepare capable versatile professionals to work in technological projects, audiovisual systems design, and project management; at a sector of constant evolution. The degree of these studies provides the professional attributions that are required in this speciality.

1.4. University life

The School enjoys an intense university life that fosters and facilitates participation, project-based learning, values education, entrepreneurship and the channelling of personal interests in the framework of teaching projects that combine training with immersion in the professional world.

The ESEIAAT provides the opportunity to enjoy a unique life experience. It promotes and facilitates international mobility, work placements, collaboration with leading research groups, double degrees, exciting projects with new classmates and participation in the Campus's student associations. Everything is focused on students completing their studies with the guarantee of a successful career and the most extensive social reach.

Learning support services are available that are centred on students' needs and help them to adapt to university life. Students are given professional, one-to-one, friendly attention throughout their time at the School. All this takes place on an urban campus with very good transport links and excellent scientific and technological infrastructure that is available for students, research groups and centres, researchers, professionals, companies and institutions.
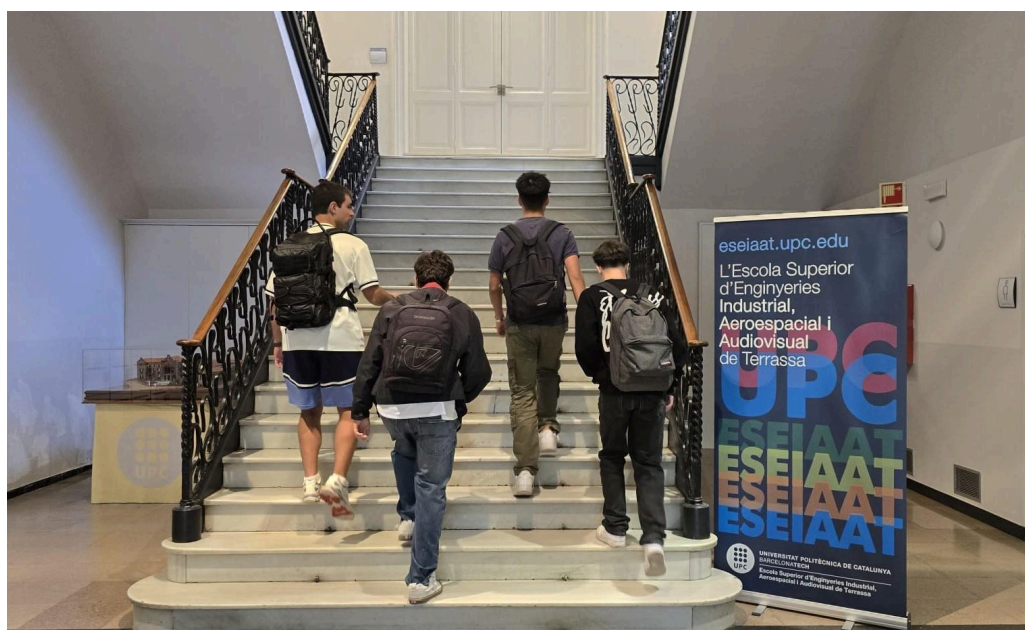
Photograph 2. Lobby of the TR-1 building

1.5. Business contact details

University	Terrassa School of Industrial, Aerospace and Audiovisual Engineering (ESEIAAT)
Address	C/ Colom, 1-11. 08222 Terrassa (Barcelona)
Website	https://eseiaat.upc.edu/ca
CIF	Q-0818003-F
Tel. no.	93 739 8102

1.6. ESEIAAT buildings

Photograph 3. Map of the UPC Terrassa Campus

1. Management
2. Head of Terrassa Campus Management and Support Unit
3. Department and Institute Support Area
4. External Relations and Institutional Support Area
5. Bachelor's, Master's and Doctoral Degree Management Support Area
6. Research and TRR Management Support Area
7. Resources and Services Area
8. Works and Maintenance Service
9. ICT services
10. Laboratory Technicians Service Area
11. 24/7 space
12. Library

1.7. Degrees

Degrees in industrial engineering. Bachelor's degrees

Bachelor's degree in Industrial Design and Product Development	GREDIDP
Bachelor's degree in Electrical Engineering	GRELEC
Bachelor's degree in Industrial Electronics and Automatic Control Engineering	GREEIA
Bachelor's degree in Mechanical Engineering	GREMECA
Bachelor's degree in Chemical Engineering	GREQUIM
Bachelor's degree in Textile Technology and Design Engineering	GRETDT
Bachelor's degree in Industrial Technology Engineering	GRETI

Degrees in industrial engineering. Master's degrees

Master's degree in Industrial Engineering (120 ECTS credits)	MUEI
Master's degree in Textile Design and Technology (60 ECTS credits)	MUDTT
Master's degree in Paper and Graphics Technology (60 ECTS credits)	MUTPIG
Master's degree in Automatic Systems Engineering and Industrial Electronics (90 ECTS credits)	MUESAEI
Master's degree in Management Engineering (120 ECTS credits) *	MUEO
Master's degree in Technology and Engineering Management (90 ECTS credits)	MEM
Master's degree in Advanced Studies in Design-Barcelona (60 ECTS credits)	MBDesign
Master's degree in Research in Mechanical Engineering (90 ECTS credits)	MUREM

(*) Blended learning

Degrees in aerospace engineering. Bachelor's degrees

Bachelor's degree in Aerospace Technology Engineering	GRETA
Bachelor's degree in in Aerospace Vehicle Engineering	GREVA

Degrees in aerospace engineering. Master's degrees

Master's degree in Aerospace Engineering (120 ECTS credits)	MUEA
Master's degree in Space and Aeronautical Engineering (60 ECTS credits)	MASE

Degrees in telecommunications engineering. Bachelor's degrees

Bachelor's degree in Audiovisual Systems Engineering	GRESAUD

1.8. Departments

ESEIAAT degrees are taught by professors from various UPC departments. These departments are:

702 - Department of Materials Science and Engineering (CEM)
707 - Department of Automatic Control (ESAII)
709 - Department of Electrical Engineering (DEE)
710 - Department of Electronic Engineering (EEL)
712 - Department of Mechanical Engineering (EM)

	Internal quality assurance system (IQAS)
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713 - Department of Chemical Engineering (EQ)

715 - Department of Statistics and Operations Research (EIO)

717 - Department of Engineering Graphics and Design (DEGD)

723 - Department of Computer Science (CS)

724 - Department of Heat Engines (MMT)

729 - Department of Fluid Mechanics (MF)

731 - Department of Optics and Optometry (OO)

732 - Department of Management (OE)

737 - Department of Strength of Materials and Structural Engineering (RMEE)

739 - Department of Signal Theory and Communications (TSC)

744 - Department of Network Engineering (ENTEL)

748 - Department of Physics (FIS)

749 - Department of Mathematics (MAT)

750 - Department of Mining, Industrial and ICT Engineering (EMIT)

751 - Department of Civil and Environmental Engineering (DECA)

756 - Department of Theory and History of Architecture and Communication Techniques (THATC)

758 - Department of Project and Construction Engineering (EPC)

1.9. Information channels

The information channels that the ESEIAAT uses to provide general information about the School and its degrees are listed below.

- E-mail address

    School staff, including teaching, research and administrative staff, have access to e-mail (…@upc.edu). Student e-mail is managed by UPCnet (...@estudiantat.upc.edu).

- ESEIAAT website and intranet

    The School's website, https://eseiaat.upc.edu/, is the showcase for the School and its degrees on the internet. It includes open-access information on IQAS processes.

    The ESEIAAT intranet contains restricted information that is accessed with a username and password.

- Atenea virtual campus

    Platform to support teaching for the restricted use of professors and students, accessed with a username and password.

- e-Secretaria

    For procedures and processes relating to academic and teaching activity.

- Claims, complaints, suggestions and expressions of gratitude box, OPINA

    Channel established so that groups of interest can address those responsible for the School's services, to express their opinion or degree of satisfaction with the services.

- Social networks

    Facebook: https://www.facebook.com/eseiaatUPC/

    X (Twitter): https://twitter.com/eseiaat_upc

Instagram: https://www.instagram.com/eseiaat_upc

LinkedIn: https://es.linkedin.com/edu/eseiaat-upc-197020

YouTube:
https://www.youtube.com/c/ESEIAATUniversitatPolit%C3%A8cnicadeCatalunya

Telegram: https://t.me/eseiaat_upc

- Noticeboards, telephone, screen in the buildings' lobbies
- Reception
- Secretary's office

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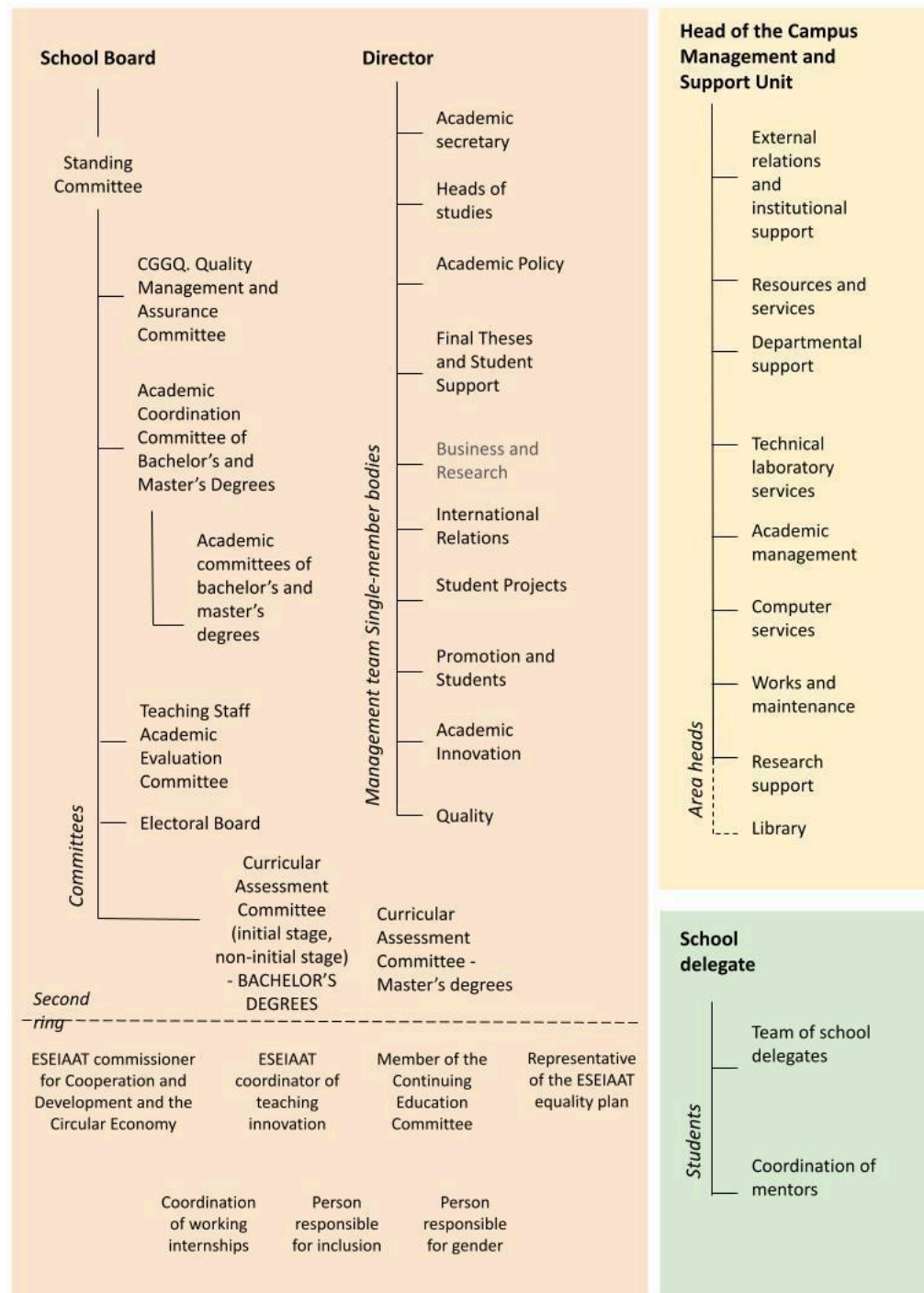
2. GOVERNANCE

2.1. Organisation chart

Figure 1. ESEIAAT organisation chart

2.2. Governing and representative bodies

The ESEIAAT regulations, approved by the Governing Council on 19 July 2016, establish the collegial and single-member governing bodies and their duties and responsibilities.

2.2.1. Collegial bodies

- Board
- Standing Committee

2.2.2. Single-member bodies

- Director
- Deputy directors
- Academic secretary
- Student delegate
- Degree coordinators

2.2.3. Management team

The management team is constituted by:

- Director
- Academic secretary
- Deputy director of Academic Policy
- Deputy director of Quality
- Deputy director–director of studies of Bachelor's Degrees
- Deputy director–director of studies of Master's Degrees and Internationalisation
- Deputy director of Final Theses and Student Support
- Deputy director of International Relations
- Deputy director of Business and Research
- Deputy director of Student Projects
- Deputy director of Academic Innovation
- Deputy director of Promotion and Students
- Head of the Terrassa Campus Management and Support Unit

2.2.4. Quality Management and Assurance Committee

Committee responsible for monitoring the quality system and degree curricula, in accordance with the ex-ante accreditation reports and Royal Decree 861/2010, of 2 July 2010. It was set up on 6 July 2016 (Quality Management and Assurance Committee regulations) as the advisory body that manages, coordinates, monitors and improves the internal quality assurance system (IQAS) (Decision CP 6/2016).

It is constituted by the following single-member bodies:

- The deputy director of Quality, who chairs the Committee.
- The deputy directors responsible for the academic area.
- The head of the Terrassa Campus Management and Support Unit.
- A coordinator of bachelor's degrees.

- A coordinator of master's degrees.
- Two members of the teaching and research staff affiliated with the School.
- A member of the technical management, administrative and services staff of the External Relations and Institutional Support Area, who acts as the secretary.
- The School's student delegate.

2.2.5. Other committees

- Academic committees of Bachelor's and Master's degrees.
- Academic Coordination Committee of Bachelor's and Master's Degrees.
- Teaching Staff Academic Evaluation Committee.
- Electoral Board.

2.2.6. Representatives

The department representatives are members of teaching departments at the ESEIAAT.

2.3. Responsibilities for quality

The ESEIAAT has defined and documented the general functions and responsibilities of the management staff who manage, undertake and verify any work that has an impact on the internal quality assurance system (see Appendix 1, "List of those responsible for the process and managers"). Even though it is not referred to specifically, they have organisational freedom and authority within their functions to:

- Identify and record any problem relating to the IQAS.
- Start actions to improve IQAS processes.
- Start actions to prevent non-compliance with IQAS processes.
- Start, recommend or adopt actions through preestablished channels.
- Verify that the solutions are implemented.
- Control processes that are not complied with until any deviations due to shortfalls or unsatisfactory situations are corrected.

2.3.1. Governing bodies with responsibility in the IQAS

The governing bodies with responsibility in the internal quality assurance system are:

- The management team (executes the design, development and review of the IQAS).

- The Quality Management and Assurance Committee (CGGQ) (monitors the IQAS and validates the review of this system that is presented to it by the management team, the annual report on the review and improvement of the IQAS, and the annual report on monitoring of the strategic plan, and submits them to the School Board for approval).

- The School Board (approves the Quality Policy, the Strategic Plan, the Annual Report of Review and Improvement of the IQAS, the Single Annual Document (SAD): management report, the monitoring report of the centre, and the Annual Report on Monitoring the Strategic Plan).

2.3.2. Main functions of staff involved in the functioning of the IQAS

2.3.2.1. Management team

ESEIAAT management is firmly committed to:

- Applying the School's quality policy and objectives.
- Ensuring that quality processes address and are focused on achieving the training requirements and objectives of the degrees the School offers.
- Continuously developing and improving the IQAS processes.
- Guaranteeing the quality of students' learning so that it meets the expectations of society in general and of stakeholders in particular.

Functions of the director

- Manage and monitor the operation of the ESEIAAT, with the support of their team, governing bodies and other committees.
- Define the functions and responsibilities associated with this operation.
- Define the quality policy and objectives with the support of their team.
- Assign the required resources to the IQAS.
- Deal with claims made by groups of interest.

Functions of the deputy director who is responsible for the quality of the School

- Assume responsibility for the quality of the School.
- Act as a representative of the School on quality-related issues.
- Disseminate information on quality at the ESEIAAT.
- Keep the director informed about the development of the IQAS through established indicators.
- Ensure that everything set out in this manual is achieved.
- Coordinate the reviews of the IQAS.
- Write and review the quality manual and annual report on the review and improvement of the IQAS.
- Identify problems with the IQAS and initiate, recommend and contribute the required solutions.
- Record risks and opportunities relating to IQAS processes.
- Control the way that causes of non-compliance and/or incidents are handled and eliminated.
- Coordinate and draw up reports on the monitoring and accreditation of the School.
- Draw up a document on monitoring the strategic objectives.

Heads of processes

- Analyse and fill in the forms for reporting on the functioning and improvement of the process, considering the results of the dashboard indicators.
- Inform the deputy director of Quality of any incident or non-compliance relating to the process.

2.3.2.2. Quality specialist

- Implement and maintain the IQAS in accordance with the established requirements.
- Identify problems with the IQAS and initiate, recommend and contribute the required solutions.
- Control the handling and elimination of causes of incidents and non-compliance.
- Support processes of monitoring and certifying bachelor's and master's degrees at the School.
- Work with the various people who are responsible for the area of quality in the School, to disseminate the School's IQAS and ensure that the School has full knowledge of it.
- Manage the document system associated with the IQAS.
- Draw up and monitor the documents of the IQAS with the support of the persons responsible for the processes.
- Support the deputy director of Quality in drawing up documents on the IQAS.

2.3.2.3. Degree coordinators

- Verify all of the processes required to correctly develop quality in the degrees that they coordinate.
- Inform the deputy director of Quality about any incident or non-compliance relating to quality, and propose methods to resolve the problem.
- Collaborate in drawing up the School's monitoring and accreditation reports.

2.3.2.4. Managers responsible for specialised processes and areas of the Management and Support Unit

Manager responsible

- Communicate incidents and non-compliance to those responsible for the process.
- Support the person responsible for the process in drawing up the report.

Specialised areas of the Campus Management and Support Unit

- Verify all the processes required for correct development of quality in the management processes in which they specialise, and inform the manager about incidents or non-compliance.
- Help those responsible for the process and the manager to collect data and indicators on the process, for use in a report.

2.3.2.5. Head of the Terrassa Campus Management and Support Unit

- Manage, organise, monitor and control quality in service management.
- Assign functions and competencies to specialised areas of the Campus Management and Support Unit so that they can provide the services planned in IQAS processes.
- Coordinate, in the area of their responsibility, the School's IQAS processes along with other cross-cutting processes that are involved.

2.3.3. Planning, Assessment and Quality Bureau (GPAQ)

This is the unit that supports the University's governing bodies in the design, implementation and monitoring of institutional planning and assessment processes, and in quality assurance, in accordance

with the guidelines, institutional objectives and current legislation and regulations. It has the following functions, among others:

- Advise academic units and provide support in the areas of strategic planning and institutional assessment, and in the improvement and internal and external certification of the quality of their activity.

- Provide technical and methodological support, in accordance with assessment agencies' requirements, to UPC academic units in the following areas:

  - Implementation and management of internal quality assurance systems (IQAS).

  - Monitoring and accreditation of bachelor's, master's and doctoral degrees.

  - Implementation and consolidation of the process of institutional accreditation of schools.

- Monitor teaching and research staff's academic planning, analyse their activity, and assess the achievement of staff objectives.

- Draw up statistical reports and indicators of the activity and results based on data analysis, to ensure the integration, reliability and representativeness of information from the University's various areas of activity, and officially disseminate statistics generated internally and externally.

- Design, administer, analyse and draw up reports on the results of satisfaction surveys and opinion studies of agents of interest about the teaching activity and offering of courses and services associated with the University's activity.

- Support the University's governing bodies in cross-cutting processes (observatories of activities and rankings, management information systems/dashboards and business intelligence tools), to provide information, undertake a technical analysis of it and carry out studies on how to disseminate the information to stakeholders.

- Manage and administer satisfaction surveys and opinion studies that are officially organised at the University and draw up and disseminate reports.

2.4. Stakeholders

In relation to the quality of the teaching and learning process, the ESEIAAT has identified the main stakeholders that participate directly or indirectly in teaching at the School (see Appendix 2).

A stakeholder is defined as any person or institution that has a direct relationship with teaching and learning at the School and the results that are obtained.

The following are considered stakeholders:

- Students
- Teaching and research staff
- Technical, management, administrative and services Staff
- Employers
- Graduates
- Public administration
- Society in general

2.4.1. Stakeholders' ways of participating

These stakeholders participate actively in one way or another in the processes that comprise the IQAS.

Specifically, **students**, **teaching and research staff** and **administrative and service staff** are represented in ESEIAAT collegial bodies or form part of the School Board, the Standing Committee and the various associated committees, such as the CGGQ.

Employers, graduates, **government bodies** and **society in general** are represented within the structure of the Universitat Politècnica de Catalunya through the Board of Trustees. The ESEIAAT can consult them through surveys or meetings when it has to make decisions on which their opinion is considered crucial.

Assessment and certification entities (ANECA, AQU) are of great importance, particularly regarding the ex-ante accreditation and certification of degrees or in the IQAS.

The **UPC** is committed to supervising quality assurance from the moment that new training programmes are verified and to undertaking annual monitoring and accreditation. It supports the ESEIAAT through the Planning, Assessment and Quality Bureau (GPAQ).

2.4.2. Rendering of accounts to the stakeholders

The ESEIAAT's management team systematically reports on the degree of achievement of the objectives and development of the IQAS to members of the School Board and the Standing Committee in ordinary sessions.

In addition, each of the procedures that forms part of the IQAS is related to public information on the results.

As part of the mechanism to provide public information and render accounts, the ESEIAAT annually draws up the management report, which is published on the School's website and brings together the main results of the activities that have been carried out and the proposals for improvement that are considered.

The satisfaction of the stakeholders is gathered from an analysis of the annual results obtained in satisfaction surveys on the processes and the claims, complaints and suggestions received through the ESEIAAT OPINA channel.

2.5. Quality Policy

At the proposal of the School's management, on 9 March 2022, the ESEIAAT School Board approved the quality policy and objectives (Agreement J.ESEIAAT/2022/01/03), which was updated in 2023 (Agreement J.ESEIAAT/2023/02/01)

3. ESEIAAT'S INTERNAL QUALITY ASSURANCE SYSTEM (IQAS)

The IQAS framework of the Universitat Politècnica de Catalunya can be defined as an ordered, systematised set of processes and activities designed to ensure the quality of the teaching that is offered by obtaining evidence, analysing information, designing improvement actions, rendering accounts and transparency.

The ESEIAAT internal quality assurance system is drawn up considering the requirements of Royal Decree Royal Decree 822/2021 of September 28, the guidelines established in the AUDIT programme and the recommendations and good practices of the UPC Planning, Assessment and Quality Bureau (GPAQ).

The aim of the IQAS is to establish a set of processes that organise the way the School undertakes activities relating to the quality of educational programmes. In these processes, procedures for action are designed and bodies are identified that are responsible for the set of activities that lead to assessment, monitoring and dissemination of the development results.

3.1. Scope of IQAS

The IQAS of the ESEIAAT is applicable to all the official bachelor's degrees and master's degrees that are taught at the School.

3.2. Structure of IQAS

The IQAS can be broadly assimilated to the image on the following page. On the one hand, it relates to an external framework that includes UPC and other external regulations. There are also Cross-cutting processes that regulate how the UPC manages quality with its units, and an Institutional Strategic Plan that marks the main lines of action up to 2025.

Within the System, there are two main elements that further the IQAS: the Quality Policy and Objectives and the Strategic Plan ESEIAAT 23-25. The Quality Policy includes principles that guide the ESEIAAT, but they do not concretize actions by itself. This specification is found in the Strategic Plan and in the Quality Objectives.

The Strategic Plan, based on a SWOT analysis of the centre and its relationships with the environment, defines three specific challenges. For each of them, three goals are established, which are specified in concrete objectives (actions). The goals are measured with indicators, which represent the Quality Objectives.

This is because Institutional Accreditation, the methodology used for designing the IQAS of UPC's centres, recommended that the Quality Objectives should derive directly from a Strategic Plan.

However, the ordinary functioning of the ESEIAAT goes beyond the guidelines established in the Strategic Plan, as it needs to regulate all the areas of the centre related to the teaching field. Thus, in the IQAS there are two different functions: on the one hand, it channels a Strategic Plan that, through goals and objectives, tries to achieve the evolution of specific indicators (Quality Objectives); and, on the other hand, it contributes to the continuous improvement of the functioning of the whole centre through the set of processes and plans that describe it, see Figure 2.
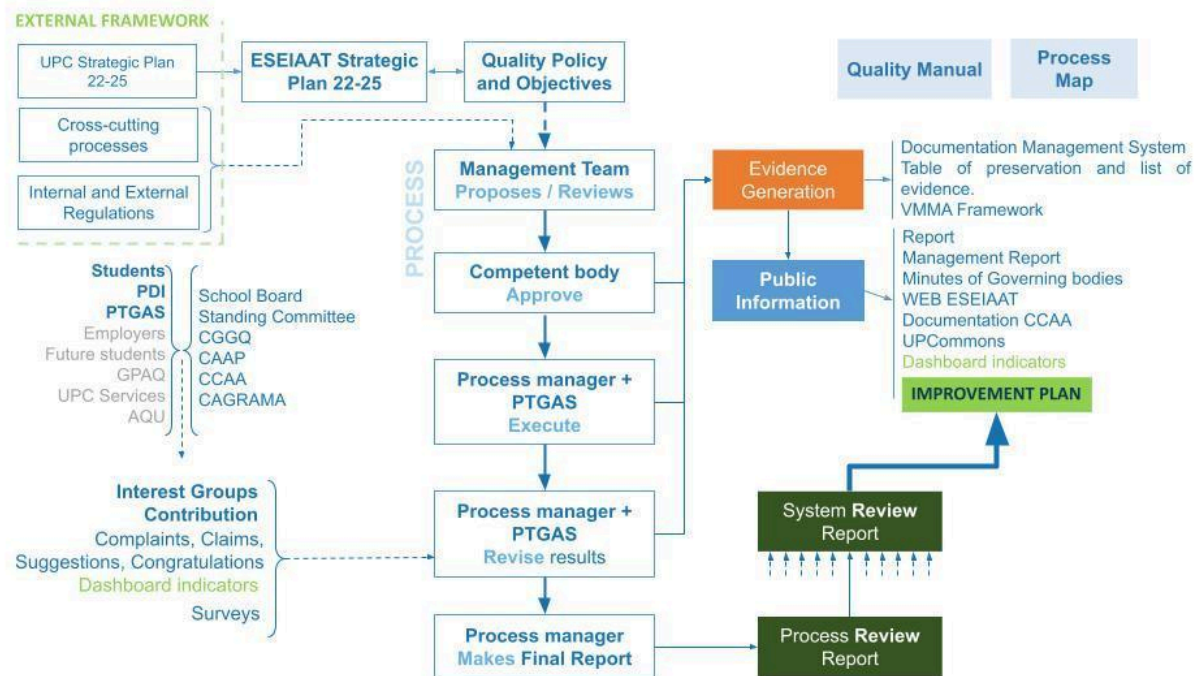
Figure 2. Structure of IQAS

3.3. Set of processes

3.3.1. Generic Structure of a Process

Although there are not two equal processes, the following sequence is quite similar for all of them:

1. Under the regulation of external normative, the Quality Policy and Objectives and the Strategic Plan, the management team proposes a set of actions aimed to be carrying out everything that is typical of each process.
2. The competent body approves, if necessary, the proposal of the management team.
3. The process manager, together with the technical, management, administrative and services staff of his area, executes the process.
4. From this process execution, evidence of the operation is generated, which is consequently filed and their results are subject to public information, either through the ESEIAAT's website, publication in the Single Annual Document: Report, Management Report, Monitoring Report (SAD), etc.
5. This System channels the contributions of the stakeholders to each process through satisfaction surveys, Opina mailbox, Tickets and contributions from the academic committees. In this regard, the Procedure for the Management of Claims, Complaints, Suggestions and Congratulations ensures that the different contributions reach the corresponding person in charge.
6. The Dashboard Indicator collects all the indicators of the whole system.
7. The final results of the process are subject of a final review, made by the process manager who answers through the process revision form, where they have the opportunity to make modifications, identify indicators with unsatisfactory results, and to request improvement actions either for their process or for the Cross-cutting Processes to help correct the problems detected.

3.3.2. Categories of Processes

The deputy director of Quality, with the support of the management team, drew up a proposal for process sheets, validated by the CGGQ on 21 January 2022. In this proposal, the processes are classified into categories: strategic processes (PE), key processes (PC), support processes (PS) and improvement processes (PM). They are as follows:
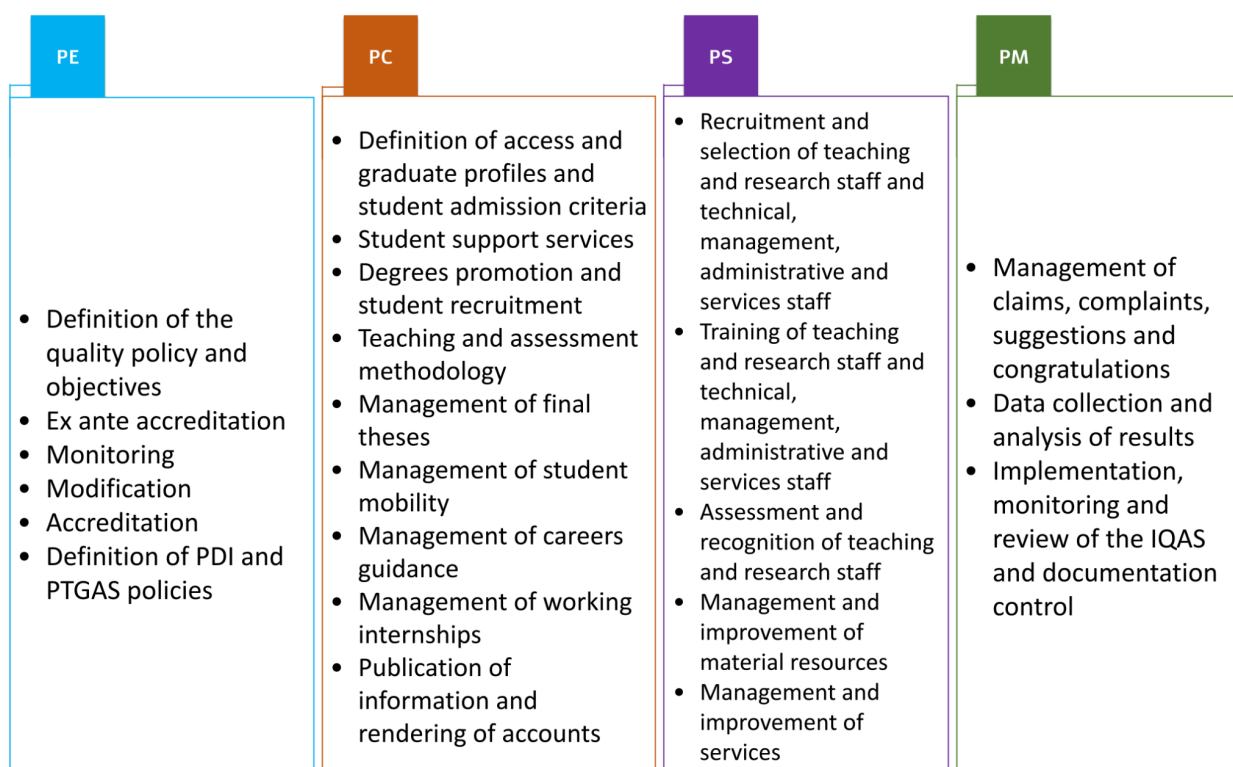

PE
- Definition of the quality policy and objectives
- Ex ante accreditation
- Monitoring
- Modification
- Accreditation
- Definition of PDI and PTGAS policies

PC
- Definition of access and graduate profiles and student admission criteria
- Student support services
- Degrees promotion and student recruitment
- Teaching and assessment methodology
- Management of final theses
- Management of student mobility
- Management of careers guidance
- Management of working internships
- Publication of information and rendering of accounts

PS
- Recruitment and selection of teaching and research staff and technical, management, administrative and services staff
- Training of teaching and research staff and technical, management, administrative and services staff
- Assessment and recognition of teaching and research staff
- Management and improvement of material resources
- Management and improvement of services

PM
- Management of claims, complaints, suggestions and congratulations
- Data collection and analysis of results
- Implementation, monitoring and review of the IQAS and documentation control

Figure 3. Categories of processes

The characteristics and functions of the four categories of processes are as follows:

● **Strategic processes**

Provide guidelines for the rest of the processes and guide the University towards the achievement of its mission.

● **Key processes**

They are directly linked to the educational activity and are therefore the processes that have the greatest impact on students. They are essential or characteristic processes aimed at meeting the users' demands.

● **Support processes**

They provide instrumental support for the development of fundamental processes and strategic processes.

- **Improvement processes**

They bring together all the assessments and proposals for improvement made by those responsible for the processes and gather information from the stakeholders.

3.3.3. Process map

The IQAS processes of the ESEIAAT are interrelated with the cross-cutting processes of the UPC, so that there is a flow between each of the ESEIAAT processes and one or more UPC Cross-cutting processes. The general relationships of inputs and outputs between ESEIAAT processes and UPC cross-cutting processes are shown in Figure 4.

PROCESS MAP of the internal quality assurance system - ESEIAAT
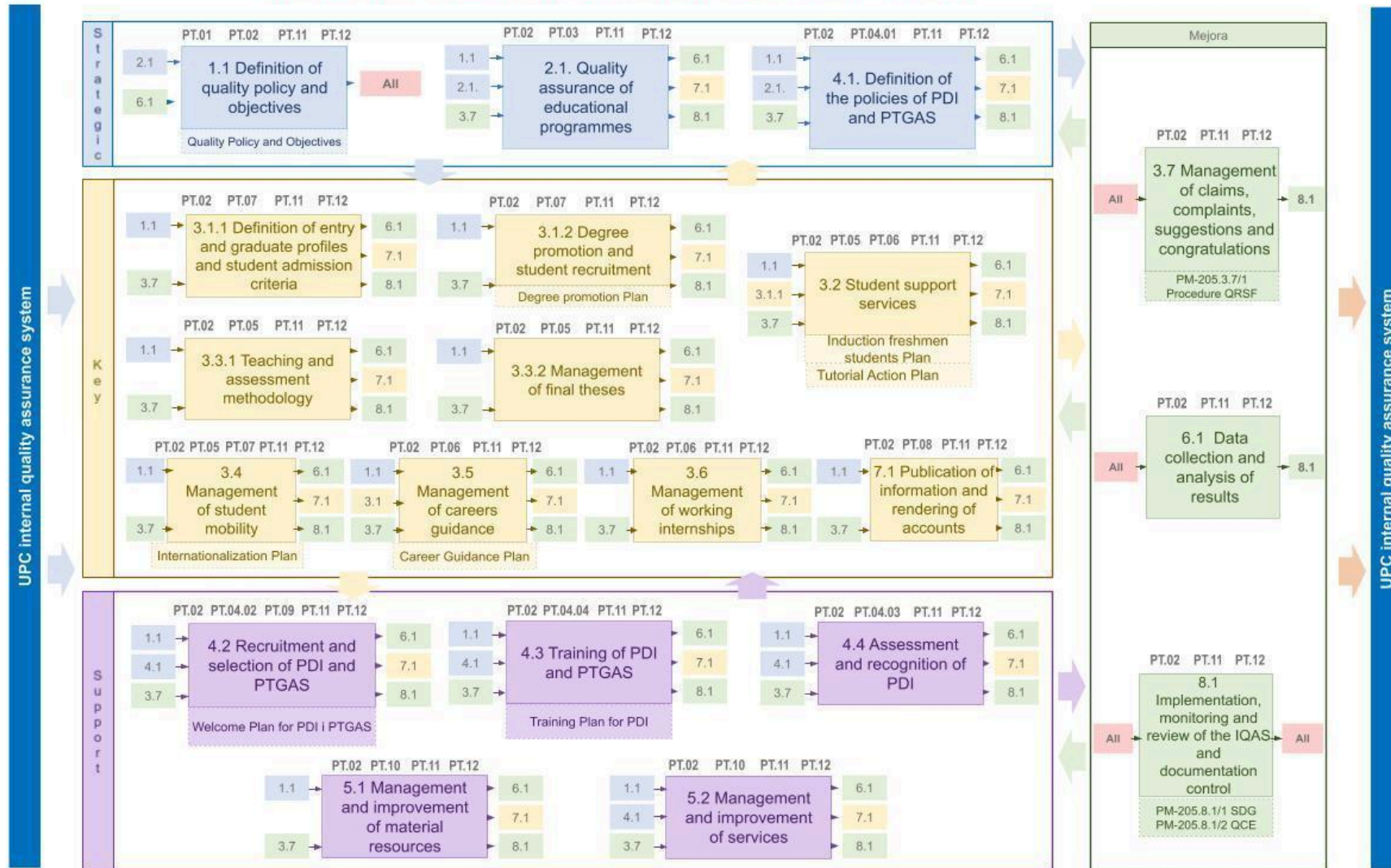
Figure 4. Process map

3.4. Dashboard Indicator

The statistical collection reflecting the School's activity in the main areas is in the Dashboard Indicator (DI). This dashboard is an instrument designed to facilitate the comprehension and analysis of the most significant indicators of the centre.

The DI contains broad information on the indicators, descriptive sheets for each indicator, main characteristics (periodicity, extraction dates, source, etc.) and methodological notes.

Figure 5. Dashboard Indicator with the detail of the indicator description tables

It also includes eyelashes with disaggregated data, either by degree or by activity, depending on what the indicator demands.
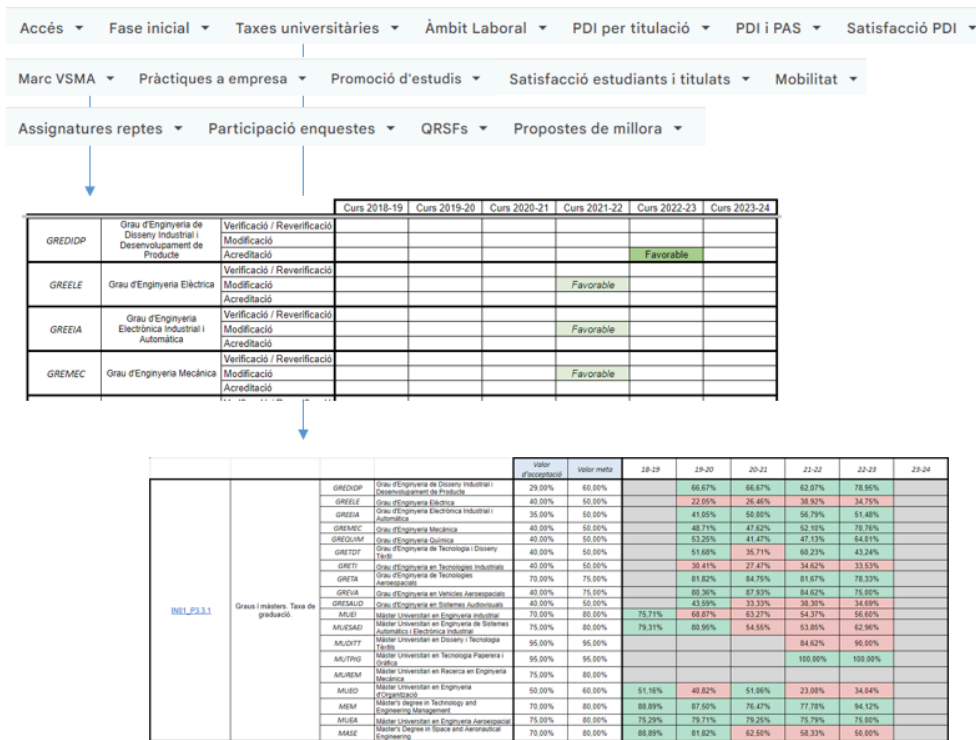
Figure 6. Dashboard Indicator. Detail of the interior spreadsheet with information display

Regarding the methodology for updating, creating and eliminating indicators, an indicator is considered modified if the change does not affect what it is measuring. In this case, the indicator remains in force. For example, if the name of the indicator is adjusted to the measured value or if the information source changes.

If the indicator is no longer used, it is considered deleted since that date. It is retained in the Dashboard Indicator to keep the previous values, but in the following columns it is marked as deleted. The indicator code will not be reused, and the date of deletion will be included in the descriptive table.

3.5. Documentation management

The ESEIAAT has procedures to control and update the documents generated by the quality system. Therefore, the following aims and criteria for action have been defined for managing documentation:

- Approve documentation before distributing it.
- Review, update and approve amendments of documents.
- Check and update documents at all times in the last level of review and ensure that they are available at the required points.
- Classify and code documentation.
- Guarantee the correct use of documents.
- Check, identify and distribute the documents that are required for planning and implementing the IQAS.
- Ensure that the documents are legible and easily identifiable.
- Manage documents that are invalid or obsolete and save only those that have a legal purpose.
- At the end of the retention period, the records must be destroyed by the person responsible for document safekeeping.

- Determine the persons responsible for the safekeeping and maintenance of the files and the control of quality records.

The main aim is to establish the procedure for recording, reviewing, amending, approving and distributing files relating to the IQAS of the ESEIAAT.

For this purpose, there is a table for the classification and preservation of all the documents generated and a list of documents that specifies the codes of the records, the description, the date of creation or modification and their nature as public or non-public, etc. In this way, the aim is to ensure the reliability of the information and the data. In addition, UPCommons is used as a repository for public digital IQAS documents.

Documentation implementation and management are defined in PM205.8.1/1 Documentation management system.

3.6. Review and improvement of the IQAS

IQAS processes are reviewed by those responsible for them, with the support of the management team, at least once a year. The aim is to ensure that they meet the requirements of UPC, autonomous community and Spanish regulations, the quality policy and the established objectives.

As specified in the processes 205.6.1 Data collection and analysis of results and 205.8.1. Implementation, monitoring and review of the IQAS of the ESEIAAT, the deputy director of Quality is responsible for gathering indicators of achievement of the objectives and for drawing up the annual report on the review and improvement of the IQAS, in which changes are recorded.

This report, along with the tracking of amendments made to processes and procedures, is submitted to the CGGQ to be revised and validated. The CGGQ submits the annual report on the review and improvement of the IQAS, and the processes and procedures reviewed, to the School Board for approval.

3.7. Improvement Plan

The Improvement Plan is the final element of the IQAS, where the specific modifications motivated by the Review and Improvement of the IQAS are defined and which is updated every time an Annual Review Report is drawn up.

As part of this report, an account is given of the Improvement Proposals (IP) that have been closed in the under the period reviewed, those that have been created, and those that remain open. Although in the review guide for each process, GPAQ proposes a specific numbering for each one, once the improvement proposals are entered into the SAT system, they take on an automatic numbering which is the one referred to.

When an IP is related to a Cross-cutting process, it is also entered in the SAT and, in parallel it is processed to the responsible of the corresponding Cross-cutting process. Once there, it can have three statuses:

- Not started. Normally because the resources (economic, personal, time) are not found to start, or because there is a lack of information to start working on the project.
- In progress. The responsible of the Cross-cutting process and the corresponding technical, management, administrative and services staff, develop what would have to cover the demanded need.
- Finished. Either because what was expected is accomplished or because what was requested is not possible.

	Internal quality assurance system (IQAS)
UNIVERSITAT POLITÈCNICA DE CATALUNYA BARCELONATECH Escola Superior d'Enginyeries Industrial, Aeroespacial i Audiovisual de Terrassa	**205. Internal quality assurance system manual**

Once the IP addressed to the Cross-cutting process is closed in the Cross-cutting process, it is taken over by the centre. If what has been done covers the totality of the need, the local IP is also closed. If not, it is necessary to study up to what point it is possible to look for the solution directly in the centre or, if it is necessary to close it.

3.8. Set of documents that comprise the IQAS

The IQAS is based on the contents established in the following documents, which develop its operating requirements.

Quality manual

The quality manual defines the scope of the IQAS, the organisation of the School, the responsibilities of the governing bodies in terms of quality and the general provisions and activities required to achieve effective quality management.

Processes

IQAS processes meet the requirements and guidelines described by the Catalan University Quality Assurance Agency (AQU Catalunya). There is a list of current processes on the IQAS website of the ESEIAAT.

UPC cross-cutting processes

The IQAS processes of the ESEIAAT are interrelated with the cross-cutting processes of the UPC, so that inputs in some processes are outputs of others. Figure 3 shows the relationships between the IQAS processes of the ESEIAAT and the cross-cutting processes of the UPC.

Procedures

The IQAS procedures of the ESEIAAT establish ways to reinforce and improve the execution of certain processes.

Dashboard Indicator

This is a table that gathers all the process indicators, which serve to analyse each process and make proposals for improvement, if necessary.

Improvement Plan

Where the specific modifications motivated by the IQAS Review and Improvement are defined and which is updated every time an Annual Review Report is done.

Other documented information

The manual, processes, procedures and other documents are generated by the IQAS, including the strategic plan, the operating plans (tutorial, reception of students, reception of teaching and research and administrative staff, promotion, professional guidance and training of teaching and research staff) and the various reports (SAD, Annual Report on the Review and Improvement of the IQAS, and Report on monitoring of the strategic plan, etc.), and the satisfaction surveys can be consulted in the Quality section of the ESEIAAT website.

The set of documents that comprise the IQAS of the ESEIAAT is the following:

Main documents

205	Quality policy and objectives
205	Strategic plan
205	IQAS manual of the ESEIAAT
205	Process map
205	ESEIAAT dashboard
205	Annual report to review and improve the IQAS

Processes

PE_205.1.1	Definition of the quality policy and objectives
PE_205.2.1.1	Ex ante accreditation
PE_205.2.1.2	Monitoring
PE_205.2.1.3	Modification
PE_205.2.1.4	Accreditation
PC_205.3.1.1	Definition of entry and graduate profiles and student admission criteria
PC_205.3.1.2	Degree promotion and student enrolment
	205. Degree promotion plan
PC_205.3.2	Student support and guidance services
	205. Tutorial action plan
	205. Induction plan for freshmen students
PC_205.3.3.1	Teaching and assessment methodology
PC_205.3.3.2	Management of final theses
PC_205.3.4	Management of student mobility
PC_205.3.5	Management of careers guidance
	205. Careers guidance plan
PC_205.3.6	Management of working internships
PM_205.3.7	Management of claims, complaints, suggestions and congratulations
	205 PM_205.3.7_1 Procedure for claims, complaints, suggestions and congratulations
PE_205.4.1	Definition of teaching and research and technical, management, administrative and services staff policies
PS_205.4.2	Recruitment and selection of teaching and research staff; and technical, management, administrative and services staff
	205. Welcome plan for teaching and research staff, and technical, management, administrative and services staff
PS_205.4.3	Teaching and research staff, and technical management, administrative and services staff training
	205. Teaching and research staff training plan
PS_205.4.4	Assessment and recognition of teaching and research staff
PS_205.5.1	Management and improvement of material resources
PS_205.5.2	Management and improvement of services
PM_205.6.1	Data collection and analysis of results
PC_205.7.1	Publication of information and rendering of accounts
PM_205.8.1	Implementation, monitoring and review of the IQAS and documentation control
	PM_205.8.1_1 Documentation management system
	PM_205.8.1._2 Table of preservation and list of evidence

Figure 7. IQAS documents of the ESEIAAT

APPENDICES

Appendix 1. List of persons responsible for the policy and managers of processes

The following table lists the persons responsible for the policies and the managers of the processes.

Table 1. Persons responsible for processes and process managers

CODE	Process	Person responsible for policy	Manager responsible
PE_205.1.1	Definition of quality policy and objectives	Director	Head of the Campus Management and Support Unit
PE_205 2.1.1	Ex ante accreditation	Deputy director of Academic Policy	Head of the Academic Management Area
PE_205.2.1.2	Monitoring	deputy director of Quality	Quality specialist
PE_205.2.1.3	Modification	deputy director of Academic Policy	Head of the Academic Management Area
PE_205.2.1.4	Accreditation	Deputy director of Quality	Quality specialist
PC_205.3.1.1	Definition of entry and graduate profiles and student admission criteria	Deputy director of Academic Policy	Head of the Academic Management Area
PC_205.3.1.2	Degree promotion and student enrolment	Deputy director of Promotion and Students	Head of the External Relations and Institutional Support Area
PC_205.3.2	Student support and guidance services	Deputy director–director of studies of Bachelor's Degrees	Head of the Academic Management Area
PC_205.3.3.1	Teaching and assessment methodology	Deputy director of Academic Policy	Head of the Academic Management Area
PC_205.3.3.2	Management of final theses	Deputy director of Final Theses and Student Support	Head of the Academic Management Area
PC_205.3.4	Management of student mobility	Deputy director of International Relations	Head of the Academic Management Area
PC_205.3.5	Management of careers guidance	Deputy director of Student Projects	Head of the Academic Management Area
PC_205.3.6	Management of working internships	Deputy director of Business and Research	Head of the Academic Management Area
PM_205.3.7	Management of claims, complaints, suggestions and congratulations	Deputy director of Quality	Quality specialist
PE_205.4.1	Definition of teaching and research; and technical, management, administrative, and services staff policies	Director	Head of the Campus Management and Support Unit

CODE	Process	Person responsible for policy	Manager responsible
PS_205.4.2	Recruitment and selection of teaching and research; and technical, management, administrative and services staff	Director Head of the Campus Management and Support Unit (administrative staff)	Head of the Campus Management and Support Unit
PS_205.4.3	Training of teaching and research staff; and technical, management, administrative and services staff	Deputy director of Academic Innovation (teaching and research staff) Head of the Campus Management and Support Unit (administrative staff)	Head of the Campus Management and Support Unit
PS_205.4.4	Assessment, promotion and recognition of teaching and research staff	Academic secretary	Head of the Campus Management and Support Unit
PS_205.5.1	Management and improvement of material resources	Head of the Campus Management and Support Unit	Head of the Management of Resources and Services Unit
PS_205.5.2	Management and improvement of services	Head of the Campus Management and Support Unit	Head of the Works and Maintenance Service
PM_205.6.1	Data collection and analysis of results	Deputy director of Quality	Quality specialist
PC_205.7.1	Publication of information and rendering of accounts	Academic secretary	Quality specialist
PM_205.8.1	Implementation, monitoring and review of the IQAS and documentation control	Deputy director of Quality	Quality specialist

Appendix 2. Involvement of the stakeholders in each process

Table 2. stakeholders

ESEIAAT processes	Teaching and research staff	Tech, management, adm. and service staff	Students	Graduates	Employers	Govt bodies and society in general
PE_205.1.1. Definition of quality policies and objectives in training	X	X	X	X	X	X
PE_205.2.1.1. Ex ante accreditation	X	X	X		X	X
PE_205.2.1.2. Monitoring	X	X	X		X	X
PE_205.2.1.3. Modification	X	X	X		X	X
PE_205.2.1.4. Accreditation	X	X	X		X	X
PC_205.3.1.1. Definition of entry and graduate profiles and student admission criteria	X	X	X	X	X	X
PC_205.3.1.2. Degree promotion and student enrolment	X	X	X		X	X
PC_205.3.2. Student support and guidance services	X		X	X	X	X
PC_205.3.3.1. Teaching and assessment methodology	X		X	X	X	X
PC_205.3.3.2. Management of final theses	X		X	X		X
PC_205.3.4. Management of student mobility	X		X			X
PC_205.3.5. Management of careers guidance	X		X	X	X	X
PC_205.3.6. Management of working internships	X	X	X	X	X	X
PM_205.3.7. Management of claims, complaints, suggestions and congratulations	X	X	X	X	X	X
PE_205.4.1. Definition of policies of teaching and research staff, and technical, management, administrative and services staff.	X	X				
PS_205.4.2. Recruitment and selection of teaching and research; and technical, management, administrative and services staff	X	X				
PS_205.4.3. Training of teaching and research; and technical management, and administrative and services staff	X	X				
PS_205.4.4. Assessment, and recognition of teaching and research staff		X				

ESEIAAT processes	Teaching and research staff	Tech, management, adm. and service staff	Students	Graduates	Employers	Govt bodies and society in general
PS_205.5.1. Management and improvement of material resources						
PS_205.5.2. Management and improvement of service resources						
PM_205.6.1. Data collection and analysis of results						
PC_205.7.1 Public information and rendering of accounts						
PM_205.8.1. Implementation, monitoring and review of the IQAS and documentation control						

Appendix 3. Glossary

Dashboard indicators: collects all the indicators of the whole system.

Document management system: process of organisation aimed at ensuring the creation, maintenance and preservation of documents required to develop the respective activities.

Improvement plan: set of proposed actions for improvement to resolve critical aspects or weaknesses in a specific activity. Each improvement action is associated with planning, a person responsible, some required resources and some monitoring indicators.

Stakeholders: any person or institution related directly to the development of teaching-learning and the results obtained at the School.

PDCA (plan-do-check-act) cycle: this is a cyclical sequence of actions that are undertaken throughout the life cycle of a service or product to plan for quality. Continuous improvement.

Process: sequence of activities that are ordered following criteria of efficiency and efficacy, transform the initial elements into products or services for the client (internal or external) and add value to them.

Student: person enrolled on the reference date in the assessment of at least one subject in any programme leading to an official qualification.

Teaching quality: implementation, monitoring and assessment of degrees and internal quality assurance systems.

Urban university campus: physical place located in the city where university activity is carried out, but also a space to meet others that generates knowledge and specificity.

Values education: activity through which students are given tools that enable them to contribute to the well-being of those around them, whether they are close to them or more distant.

Appendix 4. Acronyms

ANECA   National Agency for Quality Assessment and Accreditation.

AQU   Catalan University Quality Assurance Agency.

CAAP   Committee for the Academic Evaluation of the Faculty.

CAGRAMA   Academic Committee for the Coordination of Undergraduate and Master's Degrees.

CCAA   Academic Committee for Bachelor's and Master's Degrees.

CGGQ   Quality Management and Assurance Committee.

ENQA   European Association for Quality Assurance in Higher Education.

SAD   Single Annual Document: Annual Report, Management Report and Centre Monitoring Report.

EET   Terrassa School of Engineering.

ESEIAAT   Terrassa School of Industrial, Aerospace and Audiovisual Engineering.

ETSEIAT   Terrassa School of Industrial and Aeronautical Engineering.

GPAQ   Planning, Assessment and Quality Bureau.

PTGAS   Technical management and administrative, and services staff.

PDI   Teaching and research staff.

IP   Improvement proposal.

IQAS   Internal quality assurance system

TFE   Final thesis.

DI   Dashboard Indicator.

Appendix 5.Revision and modification control sheet

Version	Description	Approved by	Agreement no.	Date of approval
V3	**Incorporations:** • Expansion of the information on the field of audiovisual engineering. • Sub-sections 4.2 Structure of the IQAS, 4.3.1 Generic Structure of a Process, 4.5. Dashboard Indicator, 4.8. Improvement plan. **Modifications**: • Restructuring of chapter 3. • Updating of RD 1393/2007 by RD 822/2021 of September 28th. **Eliminations:** • subsection: specifying the quality objectives, strategic challenges, alignment with the UPC Strategic Plan.	School Board	J.ESEIAAT/2024/04/02	09/10/2024
V2	• Chapter 1. Sections: university life, departments, information channels • Chapter 2. Now called "Governance". The section "Governing bodies" has been restructured and the agents of the school who are responsible for quality are specified. • Chapter 3. Now called "ESEIAAT quality policy and objectives". It contains the quality policy, the ESEIAAT strategic plan and a table showing the relationship between strategic challenges, strategic objectives and the UPC strategic plan. The section "How the ESEIAAT defines its quality policy" has been deleted.	School Board	J.ESEIAAT/2023/02/01	25/10/2023

	- Chapter 4. The process map that includes cross-cutting UPC processes has been updated. IQAS - The appendices "List of those responsible for policy and process managers", "stakeholders" and "Involvement of stakeholders in each process" have been updated.			
V1	Initial version	School Board	J.ESEIAAT/2022/01/03	09/03/2022

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