



**Mondragon  
Unibertsitatea**

Faculty of  
Engineering

**MGEP**

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# ANNUAL REPORT

2023  
2024

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**“Good ideas are those that become realities”.**

José María Arizmendiarieta  
(1915-1976)



The conclusion of the 23/24 academic year marks the end of a strategic period that began during the peak of the COVID pandemic, with the online approval of the new Plan in March 2020. A period marked by a series of events, both globally and locally, some of which are still unresolved, and have shaped our activities: the pandemic, a significant raw material supply crisis, an energy crisis with shortages of gas and electricity, political uncertainties, two wars in Europe or on its borders, trade wars, an economic crisis bordering on recession at various points in Europe, strategic industrial sectors in the Basque Country facing serious difficulties, an unprecedented demographic crisis in our society, etc.

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Despite this context, Mondragon Goi Eskola Politeknikoa (MGEP) has been able to achieve and exceed all the major objectives set in its Strategic Plan.

Our society and environment, to which we are committed, need our contribution now more than ever. Technology holds the key to addressing future challenges. It is technology that is poised to offer solutions in these times of transition and change, providing answers to the climate challenge, the digital challenge, and the demographic challenge. MGEP can and must support our society and its businesses in this process, and it can and must train the individuals who will lead it in the short and medium term. In recent years, we have been intensifying our efforts to ensure this happens. This is also recognised externally: according to U-Multirank, a ranking promoted by the European Union, Mondragon Unibertsitatea is the 2<sup>nd</sup> university out of more than 2,000 worldwide in the “Regional Engagement” category, and 4<sup>th</sup> in the combination of this category with “knowledge transfer”.

This is because at MGEP, we are always listening and adapting to meet the needs of society, creating new qualifications, updating training programmes, content, and methods, and developing solutions for companies through continuous training and knowledge transfer. This attitude requires a high level of responsibility, proactivity, and self-management from the people at MGEP: 508 employees and 130 students in the Dual programme throughout the 23/24 academic year. Thanks to this commitment and professional value, in the 23/24 academic year, we have increased our size by 10%, exceeding the projections of the Strategic Plan by 4% and achieving a revenue of 48.3 million euros.

With these resources, throughout the 23/24 academic year, MGEP has trained 2,357 engineering students and 300 higher Vocational Training students, including all regulated modalities. A total of 19,482 hours of Continuous Training have been delivered, 20% of which were online, and 40% were designed to meet specific training requests from companies. A total of €9.7 million (20% of the budget) has been allocated to research and knowledge generation activities, and €9.3 million (19%) to activities aimed at transferring that knowledge to businesses. In summary, we have managed to make greater progress in all of MGEP's activities.

Throughout the 23/24 academic year, significant resources have been devoted to preparing for the future. We have invested €2.8m in technological equipment, and a further €3.3m in infrastructure. We have allocated resources for 66 people to do their doctorate full time at MGEP (another 57 are doing so as part of their jobs in companies), and 36,000 hours of training and skill building, primarily technological, for employees –accounting for over 5% of our time. We have published 119 scientific articles indexed in the JCR. Today, 70% of MGEP teaching faculty have a doctoral degree. This preparation is an excellent platform, and a guarantee to face new and more ambitious challenges.

And, additionally, we continue allocating significant resources to cultivate our own future: 130 students have carried out their engineering internships at MGEP itself, as part of a complementary training process that forms our future pool of doctoral students.

During the 23/24 academic year, we have taken further steps to strengthen our presence at the Bilbao AS Fabrik campus while continuing to focus on our activities at the other campuses in Galarreta, Goierri, and Arrasate. In addition to the Degrees in Mechatronic Engineering and Engineering Physics Applied to Industry, we have introduced the Master's Degree in Robotics and Control Systems. Furthermore, we finalized the design of the Master's Degree in Artificial Intelligence, which began in October 2024. Additionally, we have begun implementing the first Research and Transfer projects with local companies at that campus. To complete our positioning in Bizkaia, it is important to highlight that the SPRI has entrusted us with the management of its new Enpresa Digitala headquarters at the Abanto Zierbena Technology Park, complementing the one we manage at the Garaia Technology Park in Mondragon. Through this platform, we train thousands of people annually in digital technologies.

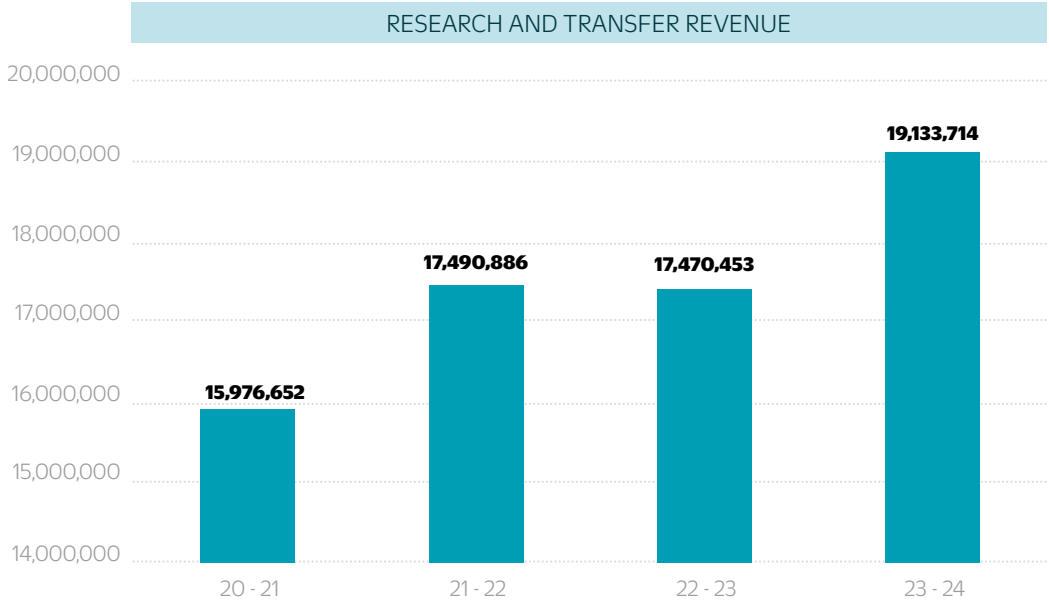
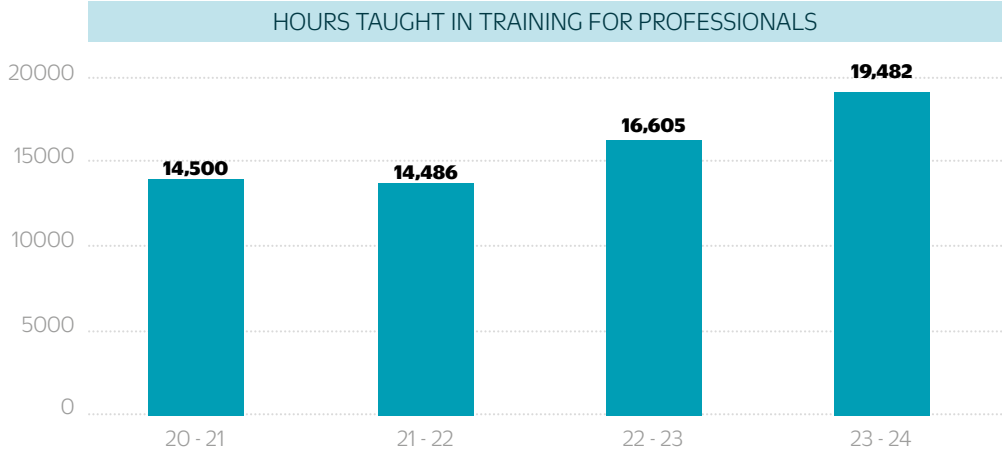
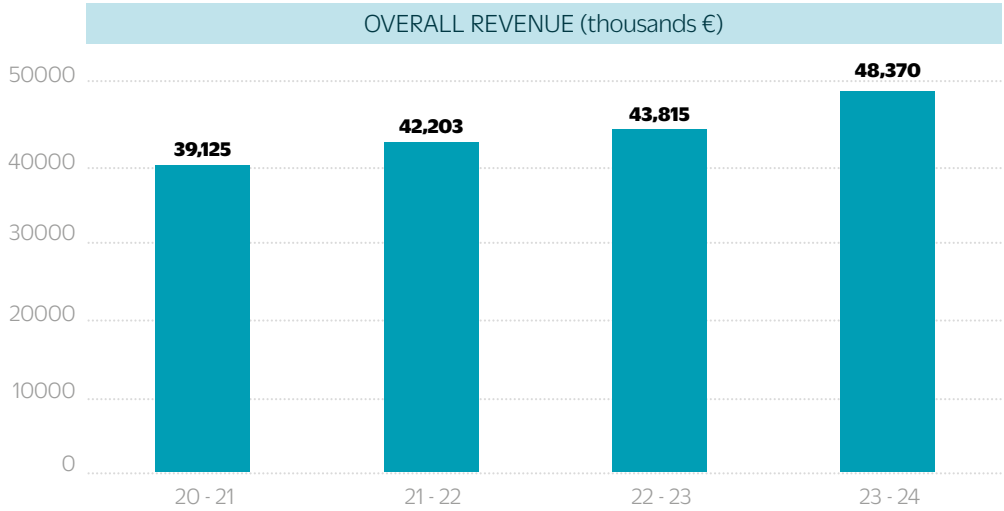
Reskilling is an increasingly urgent need in companies at all levels, to address technological changes, meet the demand for skilled workers from businesses, and ultimately, to improve people's employability. In this context, MGEP develops both customised training programmes and regulated solutions, in collaboration with the Ministries of Education and Labour of the Basque Government. Notably, this includes the launch of ad-hoc groups for employed individuals in industrial companies. There have been two such groups in the 23/24 academic year, and we are preparing to double this innovative activity in the 24/25 academic year. In addition, we have launched the first group for the Specialist Course in Digitalisation of Industrial Management and have designed a second specialist course in Cybersecurity in Operational Technology Environments, which we are already delivering.

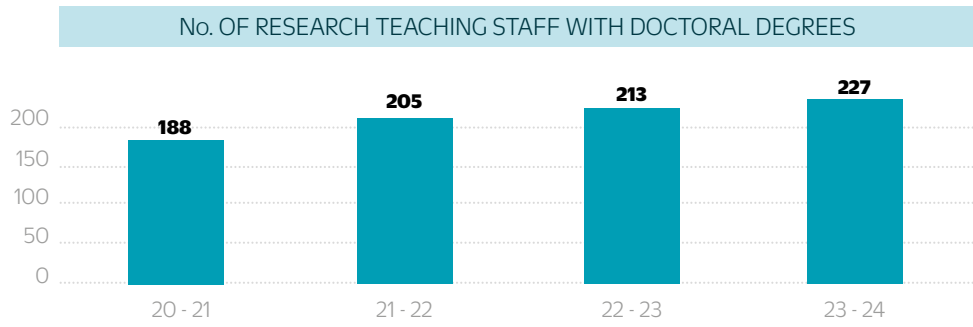
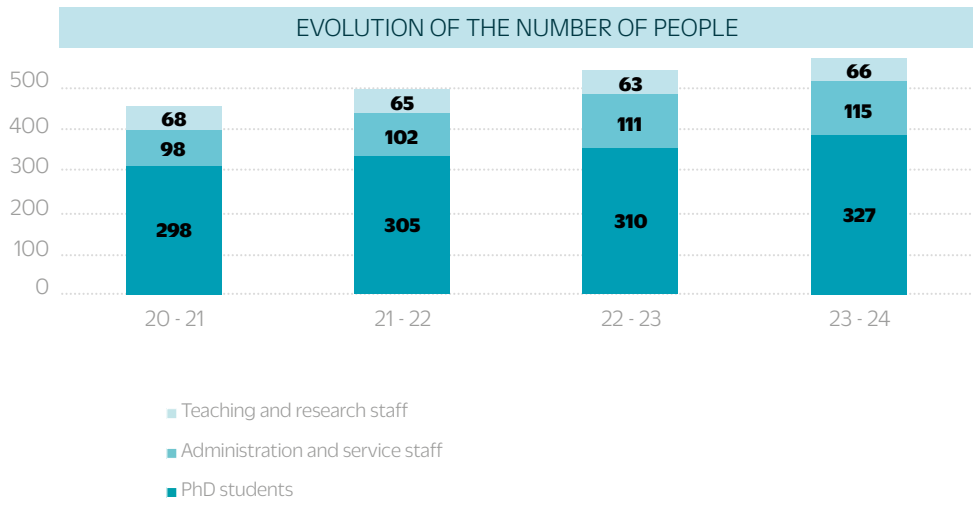
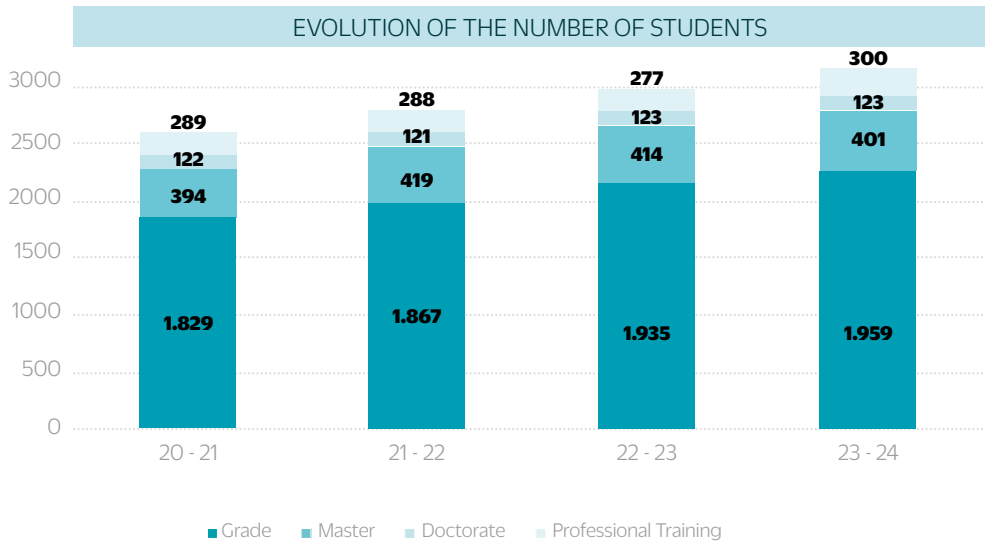
Finally, we have inaugurated the new building at the Arrasate Campus, HIREKIN, a flagship space designed to support companies in the ideation and development of innovative, sustainable industrial and technological projects aligned with social challenges. It will also host projects from the 'Mondragon Industrial Sustainable Entrepreneurship Awards' programme, which, thanks to the sponsorship of the Fagor Group cooperatives, Gizabidea, Orbea, Laboral Kutxa, and Krean, offers over €100,000 annually to support entrepreneurship projects.

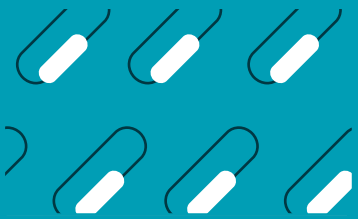
Lastly, it is important to highlight that during the 23/24 academic year, we have finalised and launched the new Strategic Plan, which has been approved and will guide our work for the next four years.



The following graphs show the evolution of some significant indicators during the 23/24 academic year:







# ENGINEERING



## Academic activity

During the 23/24 academic year, 10 Bachelor's degrees, 9 Master's degrees and 1 Doctorate degree were offered, all of them meeting the standards corresponding to the accreditation processes, both institutional and degree.

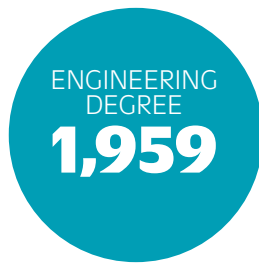
The degrees offered were as follows:

Degree in Mechanical Engineering	Dual Mention	EUR-ACE Label
Degree in Industrial Design and Product Development Engineering	Dual Mention	EUR-ACE Label
Degree in Industrial Organisation Engineering	Dual Mention	EUR-ACE Label
Degree in Industrial Electronics Engineering	Dual Mention	EUR-ACE Label
Degree in Computer Engineering	Dual Mention	
Degree in Energy Engineering	Dual Mention	
Degree in Ecotechnological Engineering in Industrial Processes	Dual Mention	
Degree in Biomedical Engineering	Dual Mention	
Degree in Mechatronics Engineering	Dual Mention	
Degree in Engineering Physics Applied to Industry		
Master's Degree in Business Innovation and Project Management		
Master's Degree in Strategic Design of Products and Services	Dual Mention	
Master's Degree in Industrial Engineering	Dual Mention	EUR-ACE Label
Master's Degree in Energy and Power Electronics	Dual Mention	
Master's Degree in Biomedical Technologies	Dual Mention	
Master's Degree in Data Analysis, Cybersecurity and Cloud Computing	Dual Mention	
Master's Degree in Robotics and Control Systems	Dual Mention	
Master's Degree in Smart Energy Systems		
Master's Degree in Productive Logistics Operations Management		
PhD in Applied Engineering		

During the 23/24 academic year, work has been carried out on the self-assessment report and the collection of the necessary evidence to obtain positive reaccreditation at both the faculty and university levels. This accreditation process is a challenging one, involving the collaboration and effort of all stakeholders. Its goal is to ensure that the faculty of engineering and the university as a whole continue to uphold the quality of the higher education they offer, and that the results meet the expected standards. This process is carried out in collaboration with UNIBASQ (the Agency for Quality Evaluation and Accreditation of the Basque University System). The accreditation report was finally issued in October 2024, with a positive evaluation result.

Once again, and also in collaboration with UNIBASQ, the evaluation of the Teaching and Research Staff (TRS) has been carried out within the framework of the DOCENTIA Programme. The programme includes an assessment of the teaching activity of the TRS, based on the criteria of experience in the activity, attitude, initiative, relevance and level of responsibility. Considering the 30 positive evaluations for the 23/24 academic year, a total of 180 teachers have already obtained a positive evaluation.

In our mission to train competent young individuals, 2,480 students have carried out their academic training in Engineering at the following levels:



As a result of our collaboration with EIT Manufacturing, we have internationalised the Master's Degree in Robotics and Control Systems in partnership with the Austrian university TÜV-Wien. During this academic year it has welcomed 3 new international students. Meanwhile, the first cohort of young graduates received the dual degree under the EIT Manufacturing label at the graduation ceremony held in November 2023 in Brussels.

In the 23/24 academic year, work has been done on defining and launching the new Master's Degree in Applied Artificial Intelligence. This master's degree will be taught at the AS Fabrik campus in Bilbao, thus expanding the engineering academic offerings at the campus. In addition, the Degree in Engineering Physics has been taught for the second year, reinforcing the attractiveness of our academic offerings in Bilbao.

As part of the EU4Dual alliance, work has begun on defining the first master's degree from this European alliance, which will be an Inter-university Master's Degree in Digital and Sustainable Manufacturing. The launch of this new master's degree is planned for the 25/26 academic year. The EU4Dual alliance, in which 9 European universities participate, led by Mondragon Unibertsitatea, aims to increase the quality and competitiveness of European higher education by using dual education to solve global challenges.

During the 23/24 academic year, and continuing with the strategy to promote STEM (Science, Technology, Engineering, and Mathematics) careers, it is important to highlight the steps taken within the MONDRAGON ZTIM-Hub initiative. The aim is to promote and raise awareness of STEM competencies by engaging local stakeholders—including businesses, associations, public entities, and schools—towards a common goal. This initiative has been developed thanks to the support of the Guipuzcoa District Council and MONDRAGON. The following measures have been taken as part of this project:

- 159 education centres were visited.
- 1,392 young people attended an open day.
- 194 young people took part in the Science Week activities from 13 to 17 November.
- 75 students took part in the activities for the International Day of Women and Girls in Science on 11 February.
- 300 students took part in the "Stem Sare" initiative for meetings between young people and business professionals.
- 80 students took part in the first edition of the ZTIM Olympics.
- 250 students took part in the final of the First Lego League Euskadi held at Mondragon's headquarters on 3 March.
- 400 young people took part in the various engineering workshops.
- 3 engineering workshops were held in schools (Lauro Ikastola, Ander Deuna Ikastola and Durangoko Jesuitak).



## EDUCATIONAL MODEL

Our institution is characterised by providing practical, business-oriented training within an increasingly international framework. To advance in this challenge, we continue to develop and implement our own distinctive educational model, which is based on the following cornerstones:

- Intensive use of active methods in the teaching/learning process.
- A model based on the development and acquisition of competences and learning outcomes.
- Continuous and global assessment of the student as key tools for the development and acquisition of competences.
- Dual training as a learning model that seeks to integrate the company in the teaching-learning process and alternate study-work with the development of internships in companies.
- Internationalisation of studies and end-of-course projects.
- Teaching in three languages.
- A close relationship with students, as well as their monitoring and mentoring.
- A change in the role of the teaching staff and students.

Aware of the importance of cross-cutting skills and the desired graduate profile, during the 23/24 academic year we have continued working to provide content to the NiZuGu Guidance Fortnights, where three fundamental aspects are worked on in the training and guidance of students: internationalisation, values and professional guidance. During these fortnights, we offered lectures, workshops, and competitions that allowed students to engage with international realities, values such as solidarity, cooperativism, and sustainability, as well as development opportunities after completing their current studies.

In the 23/24 academic year, we have continued working on the customisation project for engineering students, aimed at allowing our students to tailor their academic path according to their preferences, skills, and interests. This year, we implemented the entire designed offering. Moving forward, it is necessary to evaluate the management of this initiative, as well as its impact on the students. In this regard, the coordinator of the optional offer, who centralised the management of everything related to this work area, was a key figure.



Within the framework of the personalisation project, a step forward has also been taken with regard to the tutoring and student monitoring model, changing the focus from the teaching-learning process and its results to the graduation profile, placing attention on the integral development of the student, both from a personal and professional point of view. In the 2023/24 academic year, the tutoring model was implemented in the second year of the engineering degrees, while the proposed model for the third year was also designed. The approach from previous years has been maintained, with training sessions held for all tutors, both individual and group sessions, to share the designed tutoring model and provide training on the planned approach, the development of the designed scripts, etc. At the end of the academic year, surveys were given to the participating students and tutors. As a result, proposals for improvement were collected that will be included in the improved version of the tutoring model from the beginning of the 24/25 academic year.

With respect to the line of work to bring the cooperative world closer to MGEP students, we have continued working with ALE (Arizmendiarrietaren Lagunen Elkartea). On this occasion, and in view of the dynamics of the previous academic year, we have opted to focus the working sessions only on the student representative group, due to the key role they must play; representing the students. We have conducted 2 sessions for the student representative body, repeated in the different campuses and providing the participation of the majority of the group. Despite the interesting and necessary part of the initiative, assessed by the participants themselves, the low turnout continues to follow the tone with respect to this initiative. Once again, the assessment of the results has led us to identify some opportunities for improvement that will be implemented on the next academic year.

In response to the recommendations of the Eurace standard, to the requirements of RD 822/2021, as well as to the strategic objectives defined at MU and MGEP level for the 20/24 period, during this academic year we have continued to progress in raising students' awareness and understanding of the SDGs (Sustainable Development Goals) and ensuring that they learn to take them into account in each of the activities they carry out, both academically and professionally, in the future. This objective means that both in semester projects and in the development of the End-of-Course Degree (TFG) or Master's Degree (TFM) project, students must include a reflection on this matter. This can be done by identifying the SDGs (Sustainable Development Goals) impacted by the project, proposing ways to minimise the project's impact, or evaluating the impact generated by the project. In any case, the goal is to raise awareness about the potential impact and assess how it can be minimised.

Finally, in line with one of the strategic lines of the 2020-2024 Strategic Plan and as foreseen in the organisational model, this academic has seen the creation of the role of the Educational Innovation Coordinator, as well as the Educational Innovation Team. The objective for this academic year has been to establish the team and define its operating dynamics.

## DUAL TRAINING PROGRAMME

The definition of the Dual training system first provided by UNIBASQ and later under RD 822/2021, has allowed us to strengthen our Study-Work Programme (AET) model and that of the End-of-Course project (TFG or TFM), obtaining recognition of a track record of more than 50 years, promoting the coordination of training activities in the classroom and in the company.

This year, we have made progress in formalising our Dual programme by reviewing key processes in our Study-Work Programme (AET) and End-of-Course Degree and Master's Degree project (TFG/TFM) modalities. We are currently updating two key processes: the monitoring and assessment of students participating in the programme.

At the same time, we have continued with the training programme for Dual programme tutors in collaborating companies, training more than 40 tutors, thus taking a further step towards ensuring the quality of the activities carried out within the framework of the programme. Moreover, work has been done to document the Dual Programme in writing, creating a document that allows for its dissemination among the MGEP community.

With regard to the Study-Work Programme (AET), a total of 797 engineering students have combined study and work in the 23/24 academic year, including 607 undergraduate students and 190 master's students.

Of the 19 engineering degrees that are part of the university Dual Training programme, 15 degrees have been accredited by the Basque Quality Agency UNIBASQ, for the recognition of the Dual Mention in accordance with Royal Decree 822/21. Within the framework of the Dual engineering programme, 19.6% of bachelor's degree students and 24.8% of master's degree students have fulfilled the requirements for obtaining the Dual Mention.

It is worth noting the requests from new companies that we are receiving, which confirm the growing interest in dual university education and the widespread adoption of this strategy to integrate highly qualified talent tailored to the specific needs of companies.



The total number of students who completed their End-of-Course Degree and Master's Degree projects during the 2023/2024 academic year was 517, and a total of 654 requests were received from companies. Through the ERASMUS+ Mobility Programme, bilateral mobility agreements, and university-company agreements, 95 End-of-Course Degree and Master's Degree projects have been carried out, both in European countries and outside of Europe (Germany, Austria, Belgium, Denmark, the United States, Slovakia, Finland, France, Greece, Ireland, Italy, Malta, Mexico, the Netherlands, Poland, the United Kingdom, the Czech Republic, Romania, Sweden, Switzerland, Thailand, and Turkey).

## DOCTORATE

Throughout the 2023/2024 academic year, intensive training activities at the postgraduate level have continued. As a result, 123 doctoral students were enrolled, 33 theses were defended, with 24 receiving CUM LAUDE distinctions, 11 earning International Doctorate mentions, and 3 receiving Industrial Doctorate mentions. Additionally, 2 theses were conducted under joint supervision agreements.

## INTERNATIONAL RELATIONS

Of the 243 people who submitted applications in the academic year 23/24, 162 students in the programmes below were selected, based on their academic record and foreign language level:

- Study Mobility: 99
- Project Mobility: 54
- Doctoral Mobility: 2
- Double Diploma: 7

The countries where our students have had the opportunity to participate in mobility programmes (study stays and/or projects) include: Germany, Austria, Belgium, Croatia, Denmark, the United States, Slovakia, Estonia, Finland, France, Greece, Ireland, Italy, Malta, Mexico, the Netherlands, Poland, Portugal, the United Kingdom, the Czech Republic, Romania, Sweden, Switzerland, Thailand, and Turkey.





Meanwhile, 47 exchange students, both international and national, have studied with us or completed professional internships through the ERASMUS+ programme and inter-university agreements. Additionally, we have hosted 4 individuals from foreign universities through the Staff Mobility for Training and Staff Mobility for Teaching programmes.

**EMPLOYABILITY**

A good indicator of a job well done is given by the result of the Lanbide employability survey conducted in December 2023 among Bachelor's and Master's students who completed their studies in 2020. According to this survey, the unemployment rate is 3% among bachelor's degree graduates and 1% among master's degree graduates.

The **Biteri Hall of Residence** accommodated 111 students, of which 22,5% were foreign.



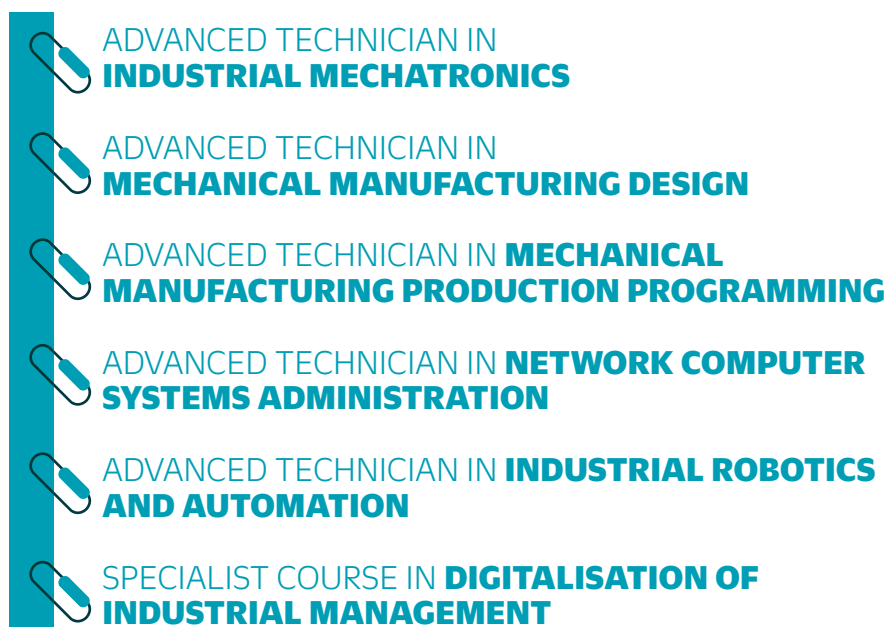
# VOCATIONAL TRAINING



Training people in Vocational Training studies is an important part of our mission to society. During the 23/24 academic year, 300 students were trained in the following Higher Level Vocational Training courses directly related to the surrounding industrial sector: Mechanical Manufacturing, Electricity and Electronics, IT and Communications and Installation and Maintenance:

STUDENTS

**300**



As a new development, this academic year we have introduced a new degree programme to be offered in the 2024/2025 academic year:



In the case of the new specialist course, which is being offered for the first time, we have developed and designed the delivery of its inaugural edition. The training is spread over a period of one year and is aimed at people who have Higher Level Vocational Training. It is an official qualification approved by the Basque Government.

In collaboration with the Vice-Ministry of Vocational Training of the Basque Government, we are continuing with training in partial offer format in the Industrial Mechatronics degree (combining studies with work) to meet the training needs of the members of the MONDRAGON Corporation cooperatives and workers in the companies in the surrounding area. A total of 30 employees are being trained by us in two groups. This is the last year that this training format is being offered. With the aim of continuing training for employees, we have worked with the Vice-Ministry of Vocational Training of the Basque Government on a new training format based on the new Vocational Training law.

Additionally, thanks to the collaboration agreement with Amazon, we continue to work on the design of a modular training programme to train more employees from this company in the field of Mechatronics. This programme began in the 23/24 academic year with the launch of a cohort of 22 students and will continue in the 24/25 academic year with another 55 individuals.

The Dual Programme for students in Higher Level Training Courses, promoted by the Basque Government, is a highly enriching learning model based on the acquisition of skills in a working environment. We have a clear com-



mitment to this programme, where the close relationship between MGEF, students and companies means that both our students and companies obtain a more than satisfactory result. This year, 81 students graduated from the advanced Dual programme, representing 80% of the total number of second-year graduates. The participation rate in the general Dual programme for first-year students (pilot test) was 87%. A total of 31 companies have hosted our students from Higher Level Vocational Training programmes in the advanced Dual training. Additionally, we maintain relationships with over 150 companies, which participate in workplace training (FCT), the general Dual programme, the advanced Dual programme, and classroom training through challenges, lectures, and seminars as experts in various topics.

This year, we have developed a technological innovation project supported by the call for innovation projects from the Vice-Ministry of Vocational Training, in collaboration with Tknika (Innovation Centre for Vocational Training). We are also continuing with the two innovation projects subsidised by the call of the Ministry of Education and Vocational Training (MEFP) that began last academic year.

We continue to lead, commissioned by the Vice-Ministry of Vocational Training together with Tknika, the Digital and Connected Factory Node, with the aim of guiding the Vocational Training Centres of the Basque Country in responding to the challenges posed by Industry 4.0

We are also making progress in active teaching-learning methodologies in vocational training based on the ETHAZI project, driven by Tknika. We continue to work on this learning method, developing new challenges, where companies are increasingly playing a leading role. Of particular note is the participation of the companies Copreci and Ulma in the challenges.

Regarding Vocational Training graduates, 0.33% of the enrolled students are registered in the job pool. In terms of employment, a very high percentage of students are either working or studying, according to the data recorded on the Shareweb platform, an initiative developed in collaboration with Hetal.

In addition to our relations with the Vice-Ministry of Vocational Training and Lifelong Learning of the Basque Government, insofar as we are an integrated concerted centre, we also participate in different programmes promoted by the Provincial Council of Gipuzkoa and Lanbide.

We maintain relations with educational centres and associations in our region and in other areas. Among others, it is worth highlighting our participation in Hetal as an associated centre in this Association of Vocational Training Centres with a social initiative with presence in many of the regions of the Basque Country.

Our Vocational Training activities are certified under the ISO 9001:2015 quality management system.



# TRAINING FOR PROFESSIONALS

In the 23/24 academic year, 2.600 professionals participated in the 298 training programmes carried out, totalling 19.482 hours of training. More and more companies are coming to us to obtain tailored training combined with a professional development plan and support in the use of methods and tools. Throughout this academic year, 116 companies have put their trust in us. 119 professors from the University and 76 external experts accompanied these professionals in the learning process, and the average satisfaction score was 8.38.

THE AVERAGE  
SATISFACTION  
SCORE

8.38

**In the field of Industrial**, Organisation in the 22/23 academic year, programmes mainly linked to supply chain management, lean manufacturing, quality engineering, sustainability and environment and project management were implemented. A new edition of the Master's Degree in Production Management has also been offered, along with a certification programme and several workshops related to Demand Driven MRP.

In the area of project management, we have defined training pathways based on microcredentials, aimed at training professionals with varying levels of experience by offering personalised education. In Lean Manufacturing we have designed a training proposal using the "training for action" methodology.

During this year we have also carried out several online courses such as: Lean Manufacturing, Quality in the Manufacturing Process and Integrated Logistics. In addition, we have taught the fourth edition of the Specialist Course in Online Project Management.

It is also worth mentioning our participation in a new edition of the Giramundo programme, where training was provided for vocational training teachers in the areas of environment, sustainability.

We have conducted over 20 in-company training sessions, incorporating the most applicable management practices to their business reality, which has allowed them to improve the management and outcomes of their processes and projects.

**In the field of Mechanical Engineering**,

18 open courses and 24 in-company training sessions have been offered on topics such as mechanical design, manufacturing processes, applied mechanics, materials, maintenance, and others. It is also worth highlighting the completion, in collaboration with Goierri Eskola and Lortek, of the International Welding Engineer (IWE / IWT) course, which allows for the acquisition of internationally recognised certification. This course was attended by 20 participants. Additionally, a new edition of the Master's Degree in Additive Manufacturing has been launched this year.



**In the field of Electronics and Energy**, specialised in-company courses have been offered to train professionals from various companies. The third edition of the Inter-university Master's Degree in Hydrogen Technologies has been offered, promoted by the Petronor-Repsol group and endorsed by 5 universities: Mondragon University, the Technical University of Catalunya, the Rovira i Virgili University, the University of the Basque Country/ Euskal Herriko Unibertsitatea and the University of Zaragoza, along with 6 training and research centres: the Somorrostro Integrated Vocational Training Centre, the Compte de Rius Vocational Training Centre, the Institut Escola del Treball, the Pirámide Public Integrated Vocational Training Centre, the Hydrogen Foundation in Aragon and the EOI Business School.

**In the field of cybersecurity**, the IT team continues to offer the Master's Degree in Continuing Education in Cybersecurity, as well as several microcredentials in online format, enabling the upskilling of professionals from companies. These include: Corporate Cybersecurity GRC, Cyber Incident Management, Ransomware Cyber Incident Response, Industrial Cybersecurity. Additionally, we have offered a Professional Certification in Computer Security.

We have offered open courses (available in our catalogue to the general public) on Digital Analytics: Audit your website (synchronous and asynchronous), Google Analytics (asynchronous), and Power BI, including two editions of the Power BI Modelling course.

In collaboration with SPRI, 40 workshops and 9 expert sessions and use case events have been organised at Garaia Empresa Digitala, with over 1,500 attendees. Additionally, we have conducted 73 Technological Barnetegis on various topics: Artificial Intelligence, Cybersecurity, Productivity, Data Analysis, Industry 4.0, Power BI, etc. Of particular note is the success (in participation and assessment) that all Barnetegis have had regarding AI generative tools, GPT and other LLMs applied to both business and marketing. We must highlight the new Empresa Digitala centre in Ezkerraldea (Bilbao) managed by the MGEP ICT team.

Likewise, there are numerous companies that have placed their trust in us both for on-demand courses and support services (training for action) in the following areas: Digital Marketing, SEO, Data Analysis, Power BI, Cybersecurity, Generative AI tools, ChatGPT, etc.



**Within the calls published by Lanbide**, six courses associated with professional certification have been offered to unemployed individuals: 2 in Machining by Chip Removal; Machining, Forming and Mechanical Assembly Production; Product Design in Mechanical Manufacturing; Management and Supervision of the Assembly and Maintenance of Industrial Automation Systems and Computer Security. These five courses add up to a total of 3.150 hours of training in which 73 people took part.

**As part of the ELKAR-EKIN programme**, funded by the Provincial Council of Gipuzkoa through the Debagoiena Consortium, three courses have been offered to unemployed individuals and those facing difficulties in labour market integration: Waste Management; Warehouse Management and Maintenance of Renewable Installations. The total duration of the courses was 505 hours, with the participation of 31 people.

Furthermore, a new edition of the online adaptation courses for the Degree in Mechanical Engineering and Degree in Industrial Electronic Engineering has been launched.

Finally, throughout the 23/24 academic year, new courses have been designed for the 24/25 academic year, including a new offering of training pathways based on microcredentials in project management and cybersecurity, as well as an Expert Course in Machining Fundamentals Applied to Sustainable Advanced Manufacturing. All this information can be consulted on the website <https://www.mondragon.edu/cursos/es>.

Our Continuous Training activities are certified under the ISO 9001:2015 quality management system.





# RESEARCH AND TRANSFER

During the 23/24 academic year, Mondragon Goi Eskola Politeknikoa has consolidated its role as a key agent in research and knowledge transfer in sectors critical to industrial innovation and sustainability in the Basque Country.

Our research and transfer model, based on long-term relationships and projects aligned with industrial needs, has strengthened the Basque industrial ecosystem. This has facilitated greater integration of technology into companies' production processes and generated innovations that contribute to the region's sustainable growth. The combination of applied research and collaboration with companies has positioned Mondragon Goi Eskola Politeknikoa as a benchmark in research and advanced technological solutions in the three priority sectors for the Basque Country: advanced manufacturing, energy, and the bio/health sector.

**Regarding fundamental research**, 10 research teams from Mondragon Goi Eskola Politeknikoa have been recognised as Excellent Research Groups by the Basque University System in its latest call, with 4 classified as type A and 6 as type B. All of them have received funding from the Basque Government.

In the same line of scientific excellence, our research staff have now accredited a total of 174 Ikertramos. We have four Research Fellows and one Research Professor from the Ikerbasque calls for postdoctoral researchers. Additionally, two of these researchers also benefit from Ramón y Cajal and Juan de la Cierva grants from the Spanish State Research Agency. It is worth highlighting that two of our Ikerbasque Fellows have received a positive evaluation from the Foundation and will transition to become Ikerbasque Associates.

All these achievements have allowed us to increase scientific output, and in the 23/24 academic year, we reached a record number of 119 articles published in high-impact journals indexed in WOS/Scopus. In the latest U-Multirank study, the largest and most detailed university ranking in the world, our publications stand out particularly for co-authorships with industrial partners. Most of these results are linked to ongoing theses and are evidence of the good work carried out by MGEF research staff. A total of 33 doctoral theses have been defended, with 123 theses currently in progress.

An essential tool that enables our Research and Transfer Groups to remain at the forefront of knowledge is the Specialisation Plan, funded by the Ministry of Education of the Basque Government. Another initiative launched during the 16/17 academic year is the PhD Plan, aimed at significantly improving the qualifications of teaching and research staff through the completion of a doctoral thesis. From the 16/17 academic year to the 23/24 academic year, 27 theses have been financed, with 25 theses successfully completed under this plan.





Thanks to the strategic alliance with IKERLAN, we have four research teams in progress in: Electrical Storage and Management, Cybersecurity, IoT / AI and Power Electronics and Electrical Machines. These mixed teams work with a unique strategy in international and local research projects, collaborating with companies, co-directing doctoral theses and publishing in the most prestigious journals in their respective fields.

None of this would be possible without the support for basic research provided by the various administrations. Among the competitive grants, special mention should be made of the Elkartek calls and those from the Provincial Council of Gipuzkoa, where the results have been particularly noteworthy. For example, in the latest Elkartek call (2024) by the Department of Economic Development, Sustainability, and Environment, a total of 24 projects were approved (two of which were led by us), with a total two-year budget exceeding 2.7 million euros. The Provincial Council of Gipuzkoa, for its part, has also supported us with over 1 million euros through its various funding calls. These types of projects allow us to continue generating knowledge, while training our R&T groups in scientific and technological fields aligned with the needs of the company. It is important to remember that these calls involve collaboration with other agents from the Basque Science, Technology, and Innovation Network (RCVTI) and companies in Euskadi, which maximises the impact on our industry. They are, for the most part, projects framed in the three key areas in the Euskadi Smart Specialisation Strategy, RIS3: Smart Industry, Cleaner Energy, Custom Healthcare and in the transversal tractor initiatives: Electric Mobility, Circular Economy and Healthy Ageing.

Among the Elkartek projects from the 2023 call led by MGEP, the MMASINT project aims to design, develop, and characterise both numerically and experimentally new magnetoactive materials with advanced properties. These materials will be integrated into the machine tool, aerospace, energy, and healthcare sectors, reducing and eliminating vibrations, creating lighter structures, enhancing control, quality, and safety, improving thermal management, and serving as a tool for personalised medicine.

Meanwhile, the RESINET project aims to research and develop solutions and tools for the design, control, and protection of energy assets to improve the resilience and flexibility of the grid. This will enable networks to recover quickly from adverse events, ensuring a safe and reliable supply of electrical energy. It addresses the challenge of improving the resilience of electrical grids in the face of increasing natural threats, as well as the growing vulnerability resulting from the integration of renewable energy sources.



In European calls, we have secured 25% of the external funding obtained through competitive grants for research activities, with a total of 33 active projects, two of which we are leading. The figure obtained during the year in Europe has reached 2.3 million euros, a 23% increase compared to the previous year.

In Europe, we led the DIMAND project from the Marie Skłodowska-Curie Innovative Training Networks (ITN-ETN) call, which concluded last March. During this project, top-level multidisciplinary training was provided to 14 young researchers in the field of Industry 4.0. MGEF coordinated three of the theses in the programme: one related to digital twins, one about cyber-physical systems for interaction with the user, and the third on the people-centre design in industry 4.0. The remaining 11 doctoral candidates will develop research projects in areas such as artificial intelligence applied to oil and gas, home automation, energy-saving tools in production systems, and digital twins, among other topics.

The European project HEFT, scheduled to finish in 2026, aims to develop cost-effective and efficient permanent magnet electric propulsion systems with higher power density for the mass production of next-generation electric vehicles. This project will enable European companies, research institutions, and universities to successfully position themselves in the market by enhancing their capabilities and knowledge in the design and manufacturing of highly efficient and cost-effective eMotors. It will also promote new employment opportunities related to magnet recycling and the circular economy for rare earth-based magnets.

In the 23/24 academic year, the INNOGUARD proposal was approved, which, starting from the 24/25 academic year, will address the new challenges posed by ensuring the quality of Autonomous Cyber-Physical Systems (ACPS) that integrate Artificial Intelligence (AI) components.

The Basque Ministry of Education has also significantly supported MGEF's research through both competitive and non-competitive grants. Of note this year was the funding received in the IKERTALDE 2022-2025 call for activities of research groups within the Basque university system.

**If there is one thing that sets us apart, it is our ability to transfer the knowledge generated to industry.** The total revenue from Transfer activity, although below the forecast in the management plan, has increased by 22%. It is important to establish and maintain long-term collaborative research programmes, and MGEF has upheld its commitment to partner companies. It is worth remembering that throughout the next year, the European Union will continue to face uncertain trade conditions, although it shows a moderate growth outlook. In this context, MGEF believes that Research and Transfer are key to emerging stronger. It is important for companies to maintain their focus on R&D, while the government should strengthen its commitment by incorporating it into public policies and strategies. In this regard, we believe that MGEF plays an important role due to its research capabilities and its model for knowledge transfer.



Our figures in knowledge transfer make us the university with the highest relationship with industry, in terms of the percentage of research funded by companies. Various studies support our position as the highest-rated in Innovation and Technology Transfer. For example, U-Multirank (2024) has once again rated us as “excellent” in parameters such as: research revenue from private sources or external financing for research. One of the keys has been, once again, the success of research personnel in aligning their technological capabilities with the needs of the company. The main proof of the value we bring to the company is that approximately half of this research funded by companies, mostly industrial, is linked to the existence of a long-term collaborative research program. The projects undertaken within the framework of these collaborative research and transfer programmes range from oriented basic research to industrial research and experimental development projects, which eventually lead to innovative products, processes, and services. Additionally, a long-term relationship allows us to align our basic research with the company strategy and train the talent they require. This results in a model with proven efficiency in the provision of a comprehensive, multidisciplinary solution to business requirements by an effectively coordination between the generation and transfer of knowledge. We have employed this model with leading companies in their sectors such as Orona (Vertical Transport), Ingeteam (Energy), División de Componentes (Home Appliances), Grupo CAF (Rail, Electric and Hybrid Buses), Grupo Velatia (Energy), Ampo (Energy), ITP-Aero (Aerospace), Fagor Arrasate (Capital Goods), Batz (Capital Goods), Shuton (Capital Goods), Grupo Ederlan (Automotive), Arestant (Storage Solutions), GH (Cranes and Components), Open Cloud Factory (Cybersecurity), Irurena (Chemicals), Siemens-Gamesa (Energy), Laboral Kutxa/Lagun-Aro (Finance), Grupo ULMA (Multisectoral), and Elay (Automotive). We have also worked with SMEs such as Developair (Software Development) and Robtrusion (Composite Materials), which have fewer resources and require personalised attention.

With all of this, we have obtained €19.1 million allocated to research (€9.7 million) and transfer and entrepreneurship (€9.4 million) in the 23/24 academic year.

m Mondragon Unibertsitatea
Portal de Producción Científica IDENTIFÍCATE

GRUPOS
INVESTIGADORES/AS
FINANCIACIÓN
RESULTADOS

## PORTAL DE PRODUCCIÓN CIENTÍFICA

¿Qué es el Portal de Producción Científica de Mondragon Unibertsitatea?

Es el portal que recoge la producción científica de la comunidad investigadora de Mondragon Unibertsitatea. Facilita la visibilidad y la transparencia de la actividad investigadora y permite a la sociedad conocer la estructura y la actividad de I+D+i en la universidad. Hace también posible la localización de personas expertas en diferentes campos científicos y es una herramienta de apoyo, tanto para el personal investigador como para los y las gestoras de la I+d+i.

Con la colaboración de:

<b>598</b>	<b>33</b>	<b>550</b>	<b>5.869</b>	<b>402</b>	<b>2.993</b>
Investigadores/as	Grupos	Financiaciones	Publicaciones	Tesis	Acceso abierto

In July 2024, we inaugurated the new **HIREKIN centre. The centre will be a benchmark in the development of entrepreneurship and sustainable innovation projects in the industrial and technological fields** through the design and validation of prototypes. The goal of HIREKIN is to promote industrial, technological, and digital entrepreneurship with sustainability criteria to transform the industry into a more sustainable, decarbonised, and digitalised sector. The new centre is designed as a space for collaboration between companies, entrepreneurs, researchers, and students from both the School of Engineering and other faculties of Mondragon Unibertsitatea, as well as external partners, all working towards a sustainable industry and a more competitive economy. All of them will work together in a network to develop entrepreneurship and intrapreneurship projects that facilitate the necessary transition to a sustainable industry. Since it is an open project, companies and organisations can join in various roles: participation in an advisory board to contribute to the strategy, sponsorship by funding students and entrepreneurship projects, and promotion with the ability to attract projects and contribute their vision to governance, based on cooperative values. The centre, with 6,000 square metres of facilities, features a large industrial space equipped with prototyping, simulation, and experimentation tools. It also includes areas for workshops and computing rooms, as well as other co-creation spaces and meeting rooms, among others. At MGEP, we will contribute entrepreneurial talent from students, as well as technological expertise and resources from research groups, available through our laboratories and workshops at other locations, thereby increasing the resources dedicated to Hirekin and industrial transformation. Led by MGEP and driven by various socio-economic agents and Basque institutions, there are currently around ten organisations involved in the initiative. It is expected that more organisations and entities will join in the future, as it is an open project. At present, the project is supported by Corporación MONDRAGON, Saiolan, Laboral Kutxa, the Fagor Group and its Gizabidea Foundation, the Debagoiena Cooperative, Isea, Galbaian, Krean, Orbea, the Garaia Technology Park, the centre's promoters (Mondragon Unibertsitatea and Mondragon Goi Eskola Politeknikoa), and the Mondragon Promotion Centre.

We held the final of the sixth edition of the “Industrial Sustainable Entrepreneurship Awards 2024,” an entrepreneurship competition aimed at sustainable industry, where all technology-based business ideas are welcome. A total of 32 projects were submitted, offering technological and sustainable solutions in areas such as design, industrial processes, biomedical, automotive, and more. The scholarships have been made possible thanks to the support of Grupo Fagor, Orbea, KREAN, and Corporación MONDRAGON, companies committed to fostering technological talent, creating employment, and generating wealth in the region. Of the 32 start-ups that entered, eleven were final winners.



In the Talent category, which offers a scholarships for a minimum of one year and a maximum of two to bring in engineering talent into the start-ups, five awards were granted: SATOP, which manufactures sports shoe soles by harnessing the benefits of 3D printing; KEIBARAN System, a portable system for cutting and handling ceramic materials and synthetic natural stone without health risks to the operator; LUP, which assists with reading for elderly individuals or those with dyslexia; and DRYFING, which cleans, dries, and disinfects wetsuits.

In the ACCESIT category, which offers 1,000 euros for technological support, three awards were granted: NIDO, which creates materials that reduce the environmental impact in construction; PROTIBERIA, which researches the protein produced by an insect, specifically *Tenebrio Molitor*, and BIZI FLOW, which offers a catalogue of over 300 everyday biodegradable, sustainable, and vegan products for personal care and home cleaning.

Finally, in the Training category, which consists of training and accompanying students for two months in their sustainable technology project, three others were awarded: BASK3D, inspired by 3D printing services for small businesses; ENKAR AUTOMATION, focused on automating industrial processes, and ONE KEY, which specialises in integrating mobile card services.

It is important to acknowledge that these achievements are the result of the work of the researchers who are part of the 19 Research and Transfer Groups, organised into the following Scientific-Technological Units:

## SCIENCE, TECHNOLOGY AND MATERIAL TRANSFORMATION PROCESSES

- Plastics and Composites Technology.
- High-Performance Machining.
- Advanced Material Forming Processes.

## INDUSTRIAL MANAGEMENT AND DESIGN PROCESSES

- Innovation – management – organisation.
- Design Innovation Centre.
- Productive Logistics Operations Management.
- Circular Economy and Industrial Sustainability.

## MECHANICAL BEHAVIOUR AND PRODUCT DESIGN

- Structural Mechanics and Design.
- Acoustics and Vibrations.
- Fluid Mechanics.
- Surface Technologies.

## EMBEDDED SYSTEMS AND SMART SYSTEMS FOR INDUSTRIAL SYSTEMS

- Software and Systems Engineering.
- Robotics and Automation.
- Data Analysis and Cybersecurity.
- Signal Theory and Communications.

## ELECTRICAL ENERGY

- Drives applied to Traction and Electric Power Generation.
- Power Electronic Systems applied to Electric Energy Control.
- Energy Storage.
- Electrical Networks.



# ECONOMIC AND FINANCIAL SITUATION



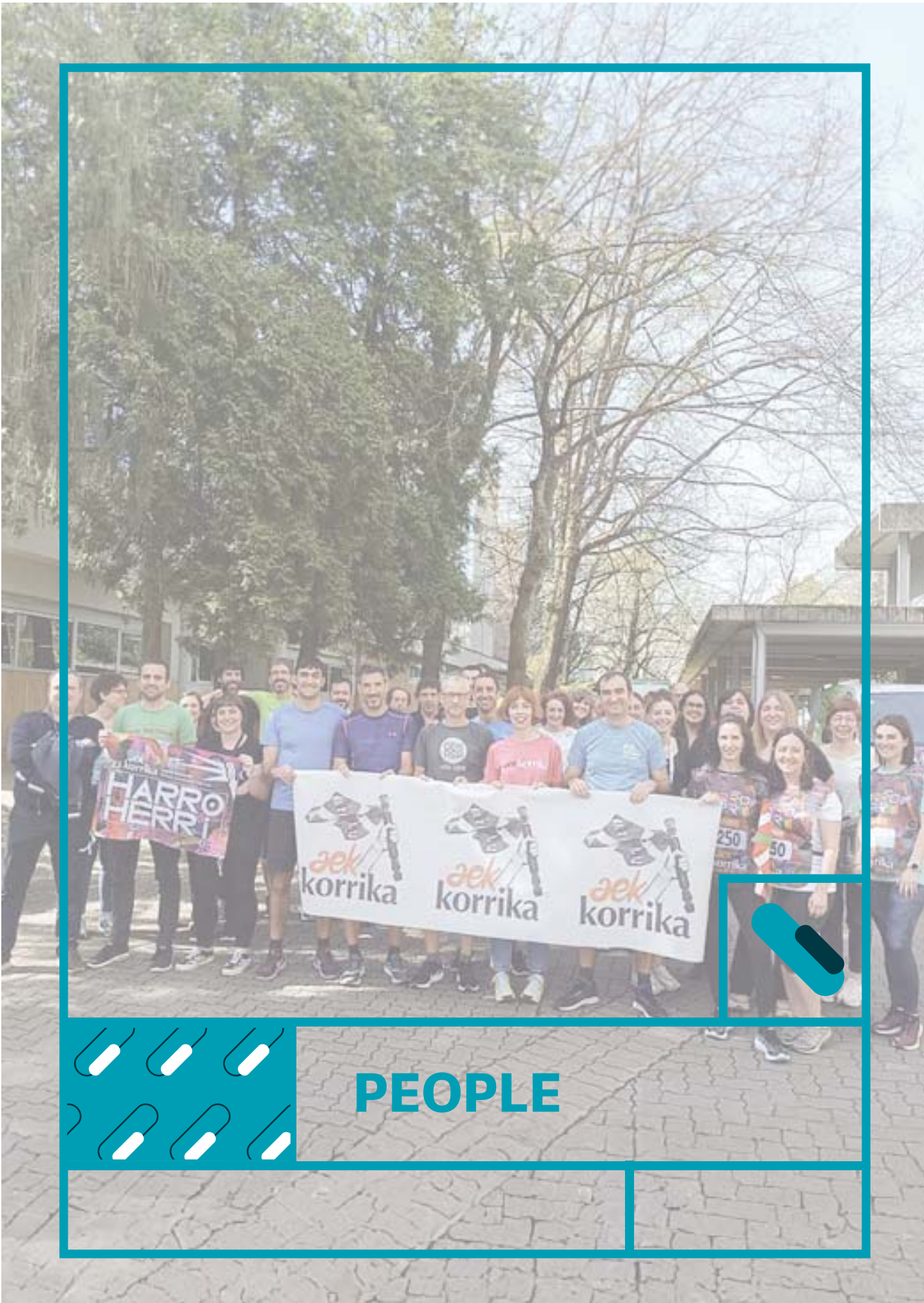


Total revenue for the 23/24 fiscal year stood at 48,369,042 euros, representing a 10% growth compared to the previous year.

The legal surplus before the allocation of the COFIP and after the payment of interest on the contributions was 279,934 euros.

The ordinary investments made and committed during the financial year amounted to 2,773,333 euros, primarily financed by grants from the FEPI of Corporación MONDRAGON, the Basque Government, and the Provincial Council of Gipuzkoa.

As of the balance sheet date on 31 August 2024, the total amounted to 79,914,077 euros, with strong positive ratios for solvency (1.38) and independence (2.91).



# PEOPLE

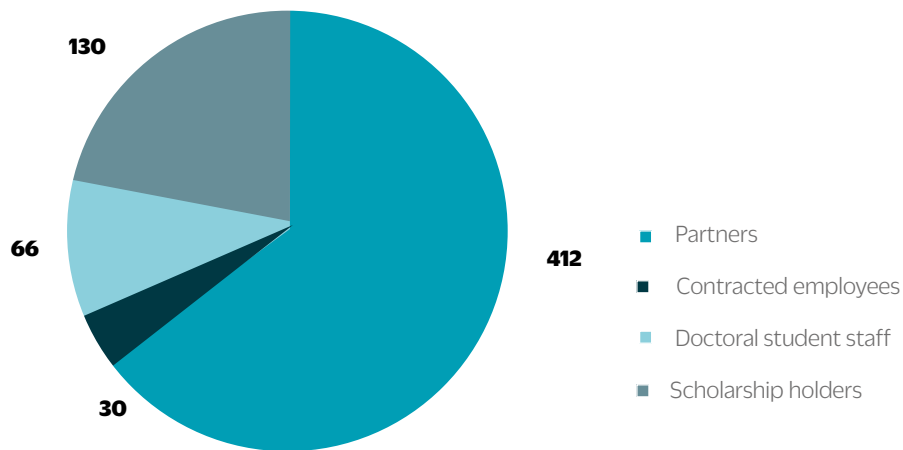


The success of all these activities would not have been possible without the involvement of the 638 members, employees, doctoral candidates, and students in the Dual programme at MGEP, who, with dedication, commitment, and responsibility, have been driving the Mondragon Goi Eskola Politeknikoa project, the legal entity of the School of Engineering at Mondragon Unibertsitatea. This is an educational project geared to the development of a free society, committed to its future.

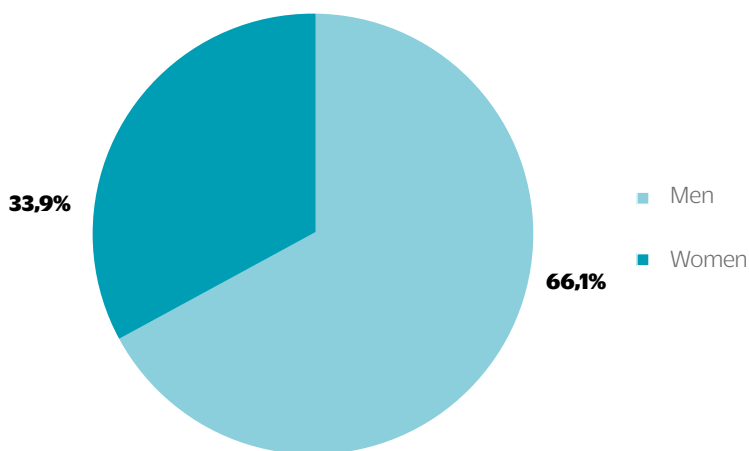
PARTNERS,  
CONTRACTORS,  
DOCTORAL  
STUDENTS,  
SCHOLARSHIP  
HOLDERS

**638**

PEOPLE



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