WP2.2. ST3AM BLUEPRINT

ST3AM

Striving for gender balance via educaTion reformation, 3A factors for Advancement, and Mentorship in STEM

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1. INTRODUCTION AND FOCUS

Erasmus+ Program **ST3AM** project under the title **"Striving for gender balance via educaTion reformation, 3A factors for Advancement, and Mentorship in STEM"** is being co-funded by the European Union and sets out to reimagine the STEM landscape by placing creativity, inclusion, and gender equality at the forefront of education. Built on the belief that innovation flourishes when science meets the arts, ST3AM project introduces an enriched STE(A)M approach that merges Science, Technology, Engineering, Arts and Mathematics to inspire more young women to pursue and thrive in STEM studies and careers. The project brings together higher education institutions and organizations across Europe to form a shared effort that strengthens female participation in STEM fields, enhances institutional gender equality practices, and empowers the next generation of women innovators.

ST3AM project consortium members setting STEAM education as a priority for the future already promote scientific-technical education and training at all educational stages. Project coordinator **Advanced Industrial Technologies Superior School (ESTIA)** in France, **University of Central Lancashire - UCLan Cyprus** in Cyprus, **University of West Attica (UNIWA)** in Greece, **Vytautas Magnus University (VMU)** in Lithuania, **University of South-Eastern Norway (USN)** in Norway, **Lodz University of Technology (TUL)** in Poland all together bring a rich concentration of knowledge and expertise by uniting scholars, researchers, and practitioners from diverse disciplines and through this convergence create environments where ideas can be shared, tested, and advanced, fostering innovation and deeper understanding across STEAM field. And all together project partners strive to achieve unique outcomes which include the development of gender-sensitive curriculum, the creation of a ST3AMspiration and Leadership Hub, boost enrollment and retention of women in STEM programs, and the establishment of a robust supportive network of realistic role models. **Overall, the ST3AM project intends to contribute to systemic change inside European higher education systems by encouraging gender equality and inclusivity, as well as connecting to other sectors and disciplines.**

Despite decades of progress, the gender gap in STEM remains a critical challenge across Europe. Women represent only around 34% of STEM graduates and remain significantly underrepresented in fields such as engineering, computer science, ICT and technology-related studies where male students often outnumber females by three to one. This gender gap is not only a question of equality but a missed opportunity for innovation – diverse teams have proven to better solve complex challenges and drive creativity. Therefore, the ST3AM project responds to this need by integrating the Arts into STEM education, harnessing creativity, design thinking, and human-centered approaches to make STEM more inclusive, attractive, and empowering for women.

To reach the goals, ST3AM project maintains coherent structure facilitated and followed by each project partner institution, when:

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- **Work Package 1** (WP1) focuses on the organizational aspects. Key actions refer to establishing the *Green Committee*, creating the *Project Management Handbook*, as well as the *Quality Assurance and Evaluation Plan*.
- **Work Package 2** (WP2) addresses the established social environment regarding Gender Equality at the HEIs by collecting real and empirical data. Also, the current Work Package and *developed ST3AM Blueprint* sets the scene for the gender-sensitive reformation of existing STEM curricula and methods that will follow.
- **Work Package 3** (WP3) focuses on designing, developing, and delivering the *ST3AM blended reformational program*.
- **Work Package 4** (WP4) and **Work Package 5** (WP5) utilize the research and reformational material but also takes the project to the next level by creating a *digital host* where the reports are accessible, linking the theory to real examples and solutions, *testing the material and finalizing it*, and finally *disseminating the outcomes* achieved.

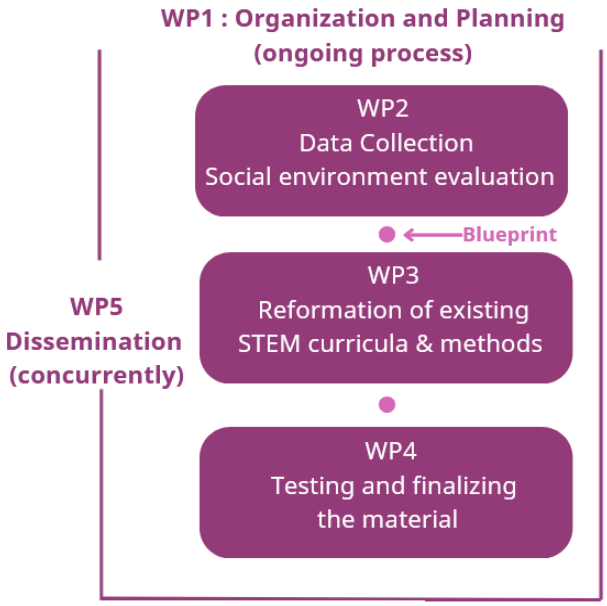

FIGURE 1. ST3AM PROJECT STRUCTURE

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2. ST3AM BLUEPRINT OBJECTIVES

Why a blueprint?

Based on the country reports issued by ST3AM partners, the ST3AM blueprint serves the vision of **developing and implementing strategies to enhance women participation and success in STEM higher education**. This blueprint is built on cross-country research, institutional consultations, and the voices of students and educators to propose actionable strategies that transform how higher education attracts, supports, and promotes women in STEM. It outlines concrete measures for increasing female enrolment, strengthening retention, improving representation in leadership, and promoting smooth transitions into STEM careers. Ultimately, ST3AM aims not only to close the gender gap but to reshape STEM education into a more equitable, creative, and empowering pathway for all.

ST3AM Blueprint aims to provide a comprehensive framework for:

- **Attracting** more women to STEM fields in higher education.
- **Ensuring equitable access** to STEM programs for female students.
- **Creating supportive and inclusive learning environments** to enhance female students' attainment and success.
- **Facilitating successful transitions** into STEM careers for female graduates.
- **Developing measurable goals** and indicators to track progress in female representation and success in STEM.
- **Promoting the sharing of best practices** and effective initiatives across institutions and countries.

Consequently, the content points to the:

- **Emphasis on female inclusion.** The methodology repeatedly highlights the collection and analysis of data specifically related to female enrolment, progression, graduation, and career outcomes in STEM. This strong emphasis indicates a primary interest in understanding and improving the representation and experiences of women in these fields.
- **Identification of challenges and solutions.** The country reports aim to identify challenges faced by women in STEM and the solutions that institutions have implemented. Our blueprint accumulates these insights to propose further actions for addressing gender disparities.
- **Highlighting successful female alumni.** The inclusion of successful female alumni serves as inspiration and provides tangible examples of career paths. Our blueprint focuses on how to better showcase these role models and connect current students with them.
- **Analyzing trends in female participation.** The longitudinal data analysis (2020-2024) aims to identify trends in female participation compared to male counterparts. A Blueprint expresses in what proportion female participation needs to be strengthened and points to some good practices when applicable.

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- **University initiatives for promotion.** The reports seek to identify and potentially disseminate successful initiatives undertaken by universities to promote female participation. A blueprint will adapt and scale these proven strategies.
- **Career opportunities for female graduates.** Understanding and promoting the career opportunities available to female STEM graduates is a key component. A blueprint will advise strategies to better prepare female students for the workforce and connect them with relevant opportunities.

In the end, we aspire to provide a strategic document with actionable steps designed to **address the underrepresentation of women in STEM and foster their full participation and achievement** within higher education and beyond.

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3. ST3AM Blueprint methodology

ST3AM Blueprint methodology is based on WP2 activities and outcomes. The main objective of WP2 refers to setting the scene for the gender-sensitive reformation of existing STEM curricula and methods (WP3). **To achieve that, the project consortium has gathered extensive qualitative and quantitative data using credible and publicly accessible online sources to prove mainly how the current approach of the educational curricula and environment are playing an important role in withholding women from pursuing STEM careers, as well as assessing the level of implementation and institutional readiness for Gender Equality Plans (GEPs).** Given that into account, WP2 was set as a collection of real and empirical data within the HEIs and guided the consortium as to the more specific aspects of both the education system and the attitudes that develop within it that need to be altered.

To formalize the present Blueprint, ST3AM consortium developed a methodology aimed at gathering data on 3 different dimensions : 1) HEI Partners Institutional data, 2) information about the Implementation of Gender Equality Plans and 3) qualitative data from Consultations sessions with HEIs Communities.

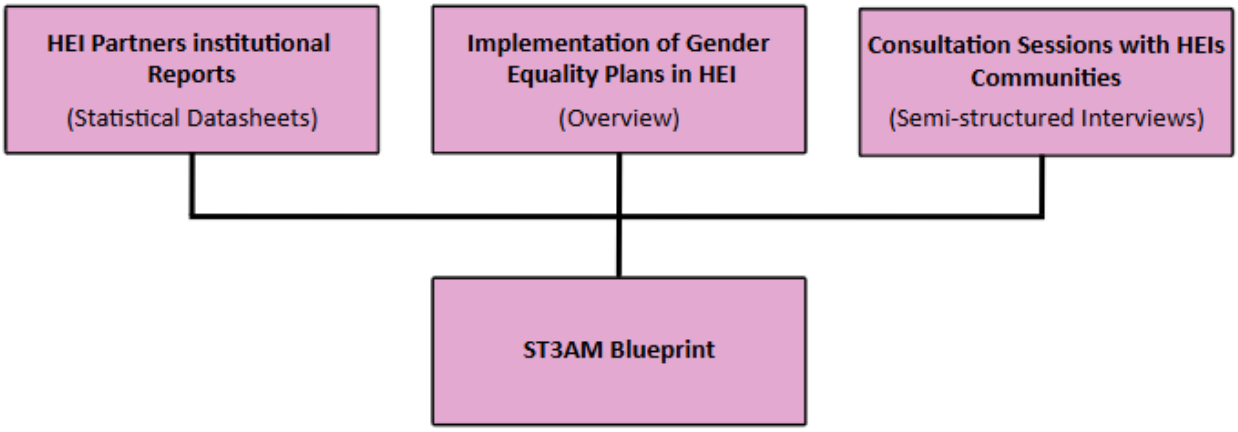

FIGURE 2. ST3AM METHODOLOGY

3.1. HEI Partners institutional reports

The Blueprint phase (WP2) started with gathering data to offer a general overview of the STEM programs available at partnering universities, across three levels of study: bachelor's degrees, master's degrees and doctoral (PhD) degrees. Particular attention was paid to the specific programs that demonstrate a higher percentage of female student enrolment. For these highlighted programs, the reports include key details such as program duration, entry requirements, areas of specialization.

The reports also outlined potential career paths and employment opportunities available to all STEM graduates, with a specific emphasis on those for female graduates. Examples of successful

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female alumni who have graduated from STEM programs were included to provide real-world illustrations of career possibilities.

The reports incorporated accumulated data from the universities themselves, focusing on the rates and current status of female participation in STEM study programs offered nationally; challenges encountered and solutions implemented to address gender disparities within STEM fields; future career opportunities available to graduates or successful career paths already experienced by graduates between 2020 and 2024.

The current status of female inclusion in STEM related study programs was based on statistics on female enrolment across different STEM programs over the last 5 years, namely during the period 2020-2024 and including total and share of female admissions, graduations in the first year (how many women continue after the first year of study), total number of graduates per field of study, total number of dropouts and the share of female dropouts. Reports presented analysis of trends in female participation compared to male counterparts, identifying insights and/or initiatives undertaken by the universities to promote female participation in STEM fields.

Data collection methods and sources refer to the universities' internal annual reports and/or statistical databases, strategic documents related to education and gender inclusivity at both the university (local) and national levels, information gathered from interviews with institutional personnel, including representatives from the Study Department and International Relations Office, faculty members, current students, and alumni, or relevant publications and other research materials.

With the reference to **SAGA Indicator Matrix**, the datasheets were developed to deliver information referring to certain indicators (saga-toolkit-wp2-2017-en.pdf): total and share of female students enrolled to the university programs by field of study and level of education (ISCED), total and share of women graduated university programs by field of study (broad and especially narrow STEM fields) and educational level, total and share of women dropping out from university programs by field of study and educational level.

All data provided at country level leads to comparative cross-country overview and insights, as explained in the following pages.

After the datasheets were produced, ST3AM partners analyzed the GEP implementation level internally.

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3.2. Implementation of Gender Equality Plans in HEIs

A structured analytical framework was designed to capture both contextual and operational dimensions of gender equality within higher education institutions. It integrates **contextual background analysis, assessment of comprehensiveness, examination of governance and implementation mechanisms, and evaluation of best practices, challenges, and recommendations.**

The first stage focused on the contextual background in which the GEP has been developed and implemented. This involves an in-depth exploration of both the national and institutional contexts. At the national level, the analysis considers the legal and policy environment governing the implementation of GEPs in higher education. **Particular attention was given to the existence of national laws, European Union directives, or funding conditions that require universities to adopt GEPs as a prerequisite for receiving financial support or maintaining accreditation**. Additionally, the broader policy landscape is examined to identify national gender equality strategies, action plans, or gender-sensitive funding mechanisms that guide institutional practices. **At the institutional level, the analysis seeks to understand how the GEP aligns with the university's strategic vision and objectives**. This includes assessing whether gender equality is explicitly embedded within the university's mission statements or strategic planning documents, and how historical, social, or cultural factors have shaped the institution's approach to gender equality over time.

The second stage evaluated the existence and level of comprehensiveness of the GEP within the partner universities. This analysis aimed to determine how thoroughly the plan addresses key dimensions of gender equality and whether it aligns with institutional goals. The first aspect concerns the **public availability and transparency** of the GEP, assessing whether the plan is accessible to the public and identifying potential barriers to transparency. The second aspect focuses on the **scope and coverage** of the plan. This involves examining the extent to which the GEP addresses critical areas such as gender balance in leadership and decision-making positions, equality in recruitment and career progression, and the existence of policies and mechanisms to prevent and respond to gender-based violence, harassment, and discrimination. To support this analysis, a GEP comprehensiveness matrix may be used to compare the degree of coverage and development of these dimensions across different universities.

The third stage focused on implementation and governance, exploring the organizational and administrative mechanisms established to operationalize the GEP. The analysis examined whether there are dedicated committees, task forces, or gender equality offices responsible for overseeing GEP implementation and evaluated their effectiveness in advancing gender equality goals. **Resource allocation** is also a critical aspect of this assessment, as the presence of sufficient financial, human, and technical resources determines the feasibility of implementation. Furthermore, the degree of **stakeholder engagement** was analyzed to understand how faculty

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members, students, and administrative staff participate in the design, execution, and monitoring of the GEP. Finally**, monitoring and accountability** mechanisms were assessed to determine how progress is tracked, whether performance indicators and regular progress reports are used, and whether external oversight mechanisms are in place to ensure accountability. A monitoring and accountability matrix can be developed to facilitate the comparative evaluation of these aspects across institutions.

The fourth stage of the methodology identified and documented **best practices** that exemplify effective GEP implementation. This includes highlighting successful initiatives and institutional strategies that have produced tangible progress in advancing gender equality. Examples of such practices may include mentorship programs aimed at supporting underrepresented genders in academia, the introduction of gender-sensitive recruitment and promotion policies, awareness and training programs designed to foster inclusivity, and flexible work or family-friendly policies that contribute to work–life balance. These practices are analyzed not only for their direct outcomes but also for their potential to serve as transferable models within or across institutions.

The final stage of the methodology addressed existing gaps, challenges, and recommendations. This stage involves a critical appraisal of the GEP's effectiveness, identifying areas that remain underdeveloped or unaddressed. Attention was given to resource constraints, limitations in stakeholder engagement, and weaknesses in monitoring and reporting systems. Recommendations were formulated to address these gaps and enhance institutional readiness for gender equality implementation. These may include strategies for improving the comprehensiveness of the GEP, securing additional resources, fostering broader participation of the university community, and refining performance indicators to better capture progress over time.

Overall, this methodology provides a comprehensive framework for evaluating the maturity and implementation level of Gender Equality Plans in higher education institutions. By combining contextual analysis, institutional assessment, and comparative evaluation, it enabled a nuanced understanding of institutional readiness, highlights effective practices, and offers actionable recommendations to strengthen gender equality policies and structures.

Once the maturity level on GEP implementation was clarified, the partners went through the last activity consisting in organizing consultation sessions with both students and professors.

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1.2.3 Consultation sessions with HEIs Communities

> The facilitation of **consultation sessions** on gender equality perception in HEIs, involved HEI staff and female students and focused on gender equality practices, on stereotypes and discrimination, gender mainstreaming and women empowerment .

The most interactive and participatory part of the Blueprint activities was the organization of consultation sessions involving 5 professors and 5 students (female) from each country, to assess their perception of gender equality in STEM.

The consultation sessions were conducted face-to-face, online, and in hybrid mode. Ones were supplemented by a survey methodology and were participated in by academia in order to assess their perceptions on gender equality inside HEIs in STEM. Insights are extremely relevant for the WP3 interventions to be precise and targeted.

A standard interview guide was issued and provided to the partners was provided, which highlighted discussion of perceptions on gender equality in HEIs referring to STEM and project goals, analyzing what problems and situations women face in STEM disciplines, and what can still be done to improve the situation if there is a need. The suggested discussion topics with professors and students were provided, for example:

- How can the culture of the institution counteract gender inequality?
- What steps could be taken to create a more inclusive and supportive environment for all genders?
- How can the institution balance meritocracy with equity?
- What role should leadership play in addressing these challenges?
- How can students be engaged in creating change?
- What metrics or indicators could be used to track progress on gender equality?

A short survey was presented for all the participants to assess whether consultations are useful. Recommended duration of individual consultations was 1 hour.

Additionally, the partners circulated a survey aimed at gathering further perspectives on gender equality perceptions in HEIs from at least 10 staff members and 10 female students per partner. This initiative generated both synchronous and asynchronous field data leading to the redaction of field reports.

Thus, implementation of all planned activities led to the achievement of short-term KPIs set for the WP2:

- Consultation sessions with STEM HEI faculty members and female students (35 STEM HEI faculty members (5 per Partner) and 35 female students (5 per Partner)
- Survey (70 STEM HEI faculty members (10 per Partner) and 70 female students (10 per Partner)

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The following section provides a cross-country analysis, a synthesis of the findings across the different ST3AM partners, which ends on conclusions & recommendations. The last section of the Blueprint includes the country reports, where the readers will be able to find country-specific information, as a complement to the key findings.

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4. CROSS-COUNTRY OVERVIEW AND KEY FINDINGS

4.1. Comparative Insights of Educational Systems' Features

This section is based on the countries' reports and provides a comparative summary of the key features of the educational systems of Cyprus, France, Greece, Lithuania, Norway, and Poland with a focus on their structures, national STEM-related policies, and gender inclusion in STEM fields.

TABLE 1: TO BE ADDED

Country	*Educational System Structure*	*National STEM Regulations / Policies*	*Gender Inclusion & STEM Participation*
Cyprus	Centralized system under the Ministry of Education, Culture, Sport and Youth. STEM is not a standalone regulatory framework but embedded within broader education and gender strategies.	No specific STEM law; STEM is promoted through the National Strategy on Gender Equality 2024–2026 (Public Policy 7) which calls for integrating empathy, gender equality, and career guidance into curricula and training.	Focus on female participation through training for career advisers/educators and inclusive curriculum design. Universities (e.g., UCLan Cyprus) implement Equality, Diversity & Inclusion plans to reduce gender disparities in STEM.
France	Education governed by the Education Code; stages include primary, lower secondary (collège), upper secondary (lycée), and higher education (LMD: Licence–Master–Doctorat)	STEM strengthened via the 2019 Baccalaureate Reform, introducing specialization (math, physics-chemistry, SVT, engineering) and the France 2030 Plan supporting research and innovation.	Persistent gender gap: women ~28% in engineering, 15% in computer science. National initiatives such as "Girls and Math" and L'Oréal–UNESCO scholarships aim to counter stereotypes and improve female enrolment.
Greece	Four levels: pre-primary (4–6), primary (6–12), lower secondary/Gymnasium (12–15, compulsory), upper secondary/Lyceum (15–18, optional general or vocational), and tertiary (universities & Technological Educational Institutes).	National curriculum integrates STEM across all levels, with emphasis on critical thinking and EU-funded projects (Erasmus+, Horizon 2020) supporting coding, robotics, and digital skills.	Women underrepresented in engineering and IT (~38% of science/technology workforce). National campaigns ('Girls in STEM') and EU programs promote mentorship, scholarships, and curricular reforms to reduce stereotypes.

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Lithuania	Unified system of pre-primary, primary, lower and upper secondary, and higher education.	Education Development Program 2021–2030 targets an increase of STEM enrolments from 28.3% (2017–18) to 33% (2030). Highlights need for stronger student interest, HEI engagement, and employer partnerships.	Despite holding the highest proportion of female scientists and engineers in the EU, gender pay gaps and career-progression barriers remain. Gender Equality Plans in universities aim to strengthen female representation in STEM leadership.
Norway	Publicly funded, highly autonomous universities and university colleges; strong research orientation.	National strategies since 2002 prioritize STEM in budgets and R&D. Ministry of Education policies (1998 onwards) and allocation measures (2009–2013) encourage female enrolment in engineering and STEM faculties.	Overall student body is ~60% female, but STEM fields remain male-dominated (female ratio ~36%, engineering ~20%). Annual HKDIR reports track gender balance and funding trends; national plans continue to emphasize inclusion.
Poland	Three main stages: preschool (from age 6), 8-year primary, and diverse secondary pathways (general, technical, vocational) leading to the Matura exam; higher education follows a 3-cycle Bologna structure (Bachelor–Master–Doctorate).	STEM embedded in the national curriculum with teacher training, competitions (e.g., Physics Olympiad), and government support for research and industry collaboration.	Gender balance is improving: women are 53% of doctoral graduates and above EU-27 average in female researchers, but leadership roles and engineering remain male-dominated. National and EU initiatives promote mentorship, visibility of female role models, and inclusive education.

A comparative review highlights several common patterns in STEM policy and practice across the six countries examined. First, STEM advancement is typically pursued through integration into national education strategies, rather than through the adoption of stand-alone legislation. Second, in Cyprus, Lithuania, Norway, and Poland, STEM promotion is closely aligned with broader gender-equality agendas, reflecting an explicit policy link between inclusiveness and innovation. Nonetheless, significant gender imbalances persist, particularly in engineering, computer science, and leadership positions, where male representation remains dominant. Finally, Greece, Lithuania, Cyprus, and Poland show substantial reliance on European Union support – most notably through Horizon Europe and Erasmus+ Programs – to strengthen STEM innovation and inclusion initiatives.

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4.2. Trends in Institutional STEM Education and Programs

Across the six countries, STEM study programs are **expanding in scope, increasingly internationalized, and aligned with digital transformation priorities**. While **life sciences attract strong female participation**, **engineering and IT remain male-dominated** despite policy attention. Positive signs include higher female representation at master's/doctoral levels and targeted gender-equality initiatives, but sustainable progress will depend on **systematic retention strategies and stronger national investment** beyond EU funding.
Let us point out that the following table is based on the context at partner's institutions ; as such, it does not reflect the national realities in their entirety.

TABLE 2: TO BE ADDED

Country (Institution)	*Highlights of STEM-related Study Programs (levels offered, key fields, special features, gender patterns, notable initiatives)*

Cyprus (UCLan Cyprus)	• **Program levels:**
	  ○ **Bachelor's (4 years)** – BSc Mathematics & Statistics, BSc Computing, BEng Computer Engineering, BEng Electrical & Electronic Engineering.
	  ○ **Master's (1 year/3 semesters)** – MSc Computing, MSc Cybersecurity (face-to-face or distance), MSc Data Analytics (with SAS Joint Certificate).
	  ○ **Doctoral** – PhD supervision in collaboration with UCLan UK.
	• **Special features:**
	  ○ International accreditations (IMA, BCS, ETEK).
	  ○ Industrial placement (sandwich year) options in engineering.
	  ○ Vendor certifications (Cisco, AWS, LPI, SAS) embedded in curricula.
	• **Gender patterns:**
	  ○ Highest female enrolment at BSc Mathematics & Statistics (~33% Year-1).
	  ○ MSc Data Analytics shows strongest female presence (~37–45%, though recently declining).
	  ○ Largest gender gap in engineering (female share ~11%).
	• **Notable initiatives:**
	  ○ Erasmus+ projects on female empowerment.
	  ○ Women in STEM bursary (since 2024).
	  ○ ACM-Women Cyprus events.
	  ○ womENcourage conference.

France (ESTIA)	• **Program levels:**
	  ○ **Bachelor's (3 years)** – General engineering with foundations in mathematics, physics, computer science, industrial engineering.
	  ○ **Engineering Diploma/Master's (5 years total)** – Mechatronics, industrial engineering, digital transformation.
	  ○ **Specialized Master's & Double Degrees** – AI, robotics, Industry 4.0, partnerships with UK universities (Cranfield, Wolverhampton).

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- **Doctoral** – PhD research with University of Bordeaux and Basque Country University.

- **Special features:**
  - Strong aerospace focus; applied, industry-linked pedagogy.
  - International double degrees and research internships.
- **Gender patterns:**
  - Rising female participation, supported by outreach programs (*Elles Bougent*, *Ingénieure au Féminin*, "Filles et Sciences" Day).
- **Notable initiatives:**
  - "Ingénieure au Féminin" booklet showcasing role models.
  - Active membership in **Elles Bougent** network.
  - Innovatech events and Filles et Sciences days to attract schoolgirls.

Greece (University of West Attica, UNIWA)

- **Program levels:**
  - **Food Science School:** BSc (4 years), MSc, PhD in Food Science & Technology and Wine, Vine & Beverage Sciences.
  - **School of Engineering:** Integrated Master's (5 years), MSc, PhD in Electrical/Electronic, Biomedical, Industrial Design, Informatics & Computer, Surveying & Geoinformatics, Mechanical, Naval Architecture, Civil Engineering.
- **Special features:**
  - Engineering degrees classified as Integrated Master's (no standalone BSc).
  - Admission through national "Panhellenic" exams.
- **Gender patterns:**
  - Historically low female share in engineering (Mechanical Eng. ~11% reported).
  - Surveying & Geoinformatics traditionally closer to parity (~50%).
  - Gender Equality Committee (EIF) established to promote inclusion.
- **Notable initiatives:**
  - Gender Equality Committee (EIF, est. 2021).
  - Outreach through "First from the West" series; access to mental health professionals.
  - Female-targeted invitations to MSc in Electrical Engineering.

Lithuania (Vytautas Magnus University, VMU)

- **Program levels:**
  - **Bachelor's (4 years)** – 10 programs in life sciences, IT, mechanical/civil engineering, biotechnology.
  - **Master's (2 years)** – 15 programs (4 part-time) covering molecular biology, environmental management, applied biotechnology, informatics.
  - **Doctoral (4 years)** – 8 programs in biology, biochemistry, biophysics, informatics, environmental engineering.
- **Special features:**
  - ~20% international students in STEM.
  - National centralized admission with compulsory mathematics and science exams.
  - State-funded places (~one-third allocated to STEM) determined by Ministry of Education.
- **Gender patterns:**

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- Life sciences dominate female enrolment (e.g., 75% women in BSc Biology & Genetics).
- Technology/engineering fields show wider gaps (e.g., IT BSc ~20% female; some engineering programs near 0% women).

- **Notable initiatives:**
  - Gender Equality Plans across universities.
  - EU-funded projects (ST3AM, FEMSTEM, Girls Go Circular).
  - National laws mandating gender equality in education.

Norway (University of South-Eastern Norway, USN)

- **Program levels** (focus on Department of Business, Strategy & Political Science with STEM-linked programs):
  - **Bachelor's (3 years)** – Visual Communication, Economics & Management, Political Science (with tech modules).
  - **Master's** – MSc Innovation & Technology Management.
  - **PhD** – Management (data limited).
- **Special features:**
  - Nationally standardized admission (Generell studiekompetanse) with STEM credit bonuses.
  - Strong emphasis on technology–business integration and interdisciplinary innovation.
- **Gender patterns:**
  - Visual Communication shows high female enrolment (~80%).
  - Innovation & Technology Management improved from 35% to 51% female enrolment (2020–2024).
  - Engineering programs across USN average ~20% female.
- **Notable initiatives:**
  - Gender balance tracked annually by HKDIR.
  - Interdisciplinary approach to merge STEM with business innovation.

Poland (Lodz University of Technology, TUL)

- **Program levels:**
  - **Bachelor's (3.5 years)** – Computer Science, Biomedical Engineering, Mechanical Engineering, Industrial Biotechnology, Electronic & Telecommunication Engineering.
  - **Master's (1.5–2 years)** – Computer Science & IT, Human–Computer Interaction, Energy Systems in the Built Environment, Nanotechnology, Applied Electronics.
  - **Doctoral (3–4 years)** – Bio-Med-Chem, Exact & Natural Sciences, Interdisciplinary Doctoral School.
- **Special features:**
  - Competitive entry requiring strong mathematics/science performance and English proficiency.
  - Career Office supports internships, job fairs, and industry collaborations.
- **Gender patterns:**
  - Female share ~30% at first cycle, ~42% at second cycle, ~50% among doctoral students.
  - Higher female participation in Biomedical Engineering and Biotechnology.
- **Notable initiatives:**
  - Gender Equality Plan and HR Excellence in Research.

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- Anti-discrimination and anti-mobbing policies.
- Career office links to internships, mentoring, and ST3AM Project for women in STEM.

STEM study programs across Cyprus, France, Lithuania, Greece, Norway, and Poland demonstrate a strong commitment to diversification, internationalization, and alignment with emerging fields such as data analytics, cybersecurity, AI, robotics, and Industry 4.0. While countries like France and Greece maintain a strong focus on engineering, institutions in Lithuania and Cyprus offer broader interdisciplinary portfolios, and Poland stands out with large-scale enrolments across multiple STEM fields. Accreditation, double-degree partnerships, and EU funding (Horizon Europe, Erasmus+) are critical in enhancing international recognition and driving innovation.
Gender participation patterns remain uneven. Life sciences consistently attract female majorities, while engineering and IT programs remain predominantly male. Encouragingly, women's representation improves at advanced levels – Poland now records over 50% female doctoral students, and Norway has reached parity in some master's programs. National and institutional initiatives, such as gender equality committees, outreach campaigns, and EU-supported projects are beginning to shift trends but have yet to eliminate structural imbalances. Sustained progress will require not only EU support but also stronger national investment and targeted strategies to improve retention, advancement, and leadership opportunities for women in STEM.

4.3. Career Outlook and Market Demands

STEM graduates across Cyprus, France, Greece, Lithuania, Norway, and Poland face strong and diverse career prospects reflecting both traditional and emerging labor market demands. Opportunities extend from **engineering, IT, and telecommunications** to high-growth fields such as **cybersecurity, data science, biotechnology, AI, robotics, and renewable energy**. **Digital transformation and innovation management** are common drivers of demand, while EU and national initiatives play a major role in enhancing employability and entrepreneurship. Several institutions strengthen graduate employability through **professional certifications, international partnerships, and entrepreneurship support**, while national strategies in countries like Lithuania are positioning life sciences and ICT as future economic growth drivers.

TABLE 3: TO BE ADDED

Country (Institution)	*Career trends and opportunities*
Cyprus (UCLan Cyprus)	• Graduates access diverse roles in **data analytics, software development, IT consulting, cybersecurity, telecommunications, renewable energy, and robotics**. • Master's graduates gain a competitive edge through **industry-recognized certifications** (e.g., Cisco, AWS, SAS), opening doors in cloud computing, defense, healthcare, and data science.
France (ESTIA)	• Strong alignment with **aerospace, robotics, smart manufacturing, and AI-driven industries**.

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	• Careers span **aircraft engineering, digital design, advanced simulation, and industrial innovation**, including entrepreneurial start-ups in med-tech. • Female alumni are advancing in **systems design, engine development, and international project management**.
Greece (University of West Attica, UNIWA)	• Career pathways include **academia and research**, **engineering and biomedical sectors**, and **entrepreneurship** supported by state funding (DYPA). • Women benefit from targeted support schemes (~60% of entrepreneurship funding) and networks promoting equality in STEM careers. • Alumni showcase innovation in **biomedical diagnostics, mechanical engineering leadership, and applied engineering projects**.
Lithuania (Vytautas Magnus University, VMU)	• High-growth sectors: **life sciences (biotech, pharma, genetics, med-tech)** and **ICT (AI, micro/nanoelectronics, photonics, space tech)**. • By 2030 both sectors aim to become significant national economic drivers (≈5% of GDP each). • STEM graduates are in demand for **R&D, start-ups, and high-value technology industries**.
Norway (University of South-Eastern Norway, USN)	• Distinct career advantages in **bridging technology with business innovation**. • Graduates pursue roles as **innovation managers, consultants, strategists, and leaders** in high-tech industries, public enterprises, and creative sectors. • Strong positioning in Norway's **innovation-driven economy**.
Poland (Lodz University of Technology, TUL)	• Broad career scope in **academia, industry (automotive, energy, manufacturing, nanotech), healthcare/biotech, and IT**. • High potential in **software engineering, cybersecurity, data science, and entrepreneurship** through start-ups and spin-offs. • Institutional support includes **career services, job fairs, mentorship projects, and gender-inclusive initiatives**.

Gender dynamics reveal both progress and persistent challenges. Targeted initiatives including female-focused outreach in France, entrepreneurship funding for women in Greece, mentoring projects in Poland and alumni success stories refer to widening opportunities and supporting inclusiveness of female in STEM.

However, women remain underrepresented in certain technical fields indicating that sustained efforts are required to ensure not only access but also retention and leadership pathways in STEM careers. Thus, there is still the need for **continued mentoring, role models, and industry partnerships** to ensure **equal women's advancement in STEM careers**.

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4.4. Level of readiness and implementation of Gender Equality Plans (GEPs)

The section provides an overview on the level of comprehensiveness of Gender Equality Plans (GEPs) across the partner institutions - **UNIWA/Innovation Hive (Greece), TUL (Poland), VMU (Lithuania), ESTIA (France), UCLan (Cyprus), and USN (Norway).** The partners also identified **best practices and key recommendations** grounded in a gap analysis to enhance the implementation of their GEPs.

The following tables provide the policy landscape relative to gender equality in the different countries represented in the consortium, the institutional background of the partners' respective GEPs and a summary of the key findings related to the comprehensiveness of GEPs across the partner institutions.

TABLE 4: TO BE ADDED

Country (Institution)	Policy Landscape
Greece (UNIWA / Innovation Hive)	National Gender Equality Plan (2021–2025); Gender Equality Committees mandatory in all universities; funding calls include gender dimensions
Norway (USN)	Policies aligned with EU directives & UN SDGs; focus on female participation in STEM (currently only 36% women in STEM, 20% in engineering)
Poland (TUL)	National legal framework ensures equal opportunities; gender equality enforcement mainly through employment law
Lithuania (VMU)	Ministry of Education recommendations on gender equality; University Rectors' Conference guidelines on harassment prevention; promotion of women in senior research positions
Cyprus (UCLan)	National Strategy on Gender Equality (2024–2026); National Machinery for the Advancement of Women; adoption of Athena Swan Cyprus Charter; external evaluation agencies promote equality but without legal enforcement
France (ESTIA)	Interministerial Plan for Equality (2023–2027, 160 measures); Ministry of Higher Education GEP (2025–2027, 7 action axes: governance, HR, pay gaps, work-life balance, anti-violence, women's health, awareness/training)

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TABLE 5: TO BE ADDED

Institution	Institutional Strategy & Vision
UNIWA / Innovation Hive	Strategic goals 2024–2027 include: strengthening Gender Equality Committee, improving student services, reducing inequalities, creating sexual harassment manual (though not clearly aligned with GEP). Both strategy and GEP lack details and structure.
USN	Gender equality is a strategic priority, especially in STEM. Aims to increase female participation in STEM and leadership roles. Embedded in strategic plans but still facing slow progress and cultural barriers.
TUL	Strategy 2025–2030 emphasizes cooperation across 11 areas (impact, innovation, leadership, staff, students, etc.). Personnel policy integrates GEPs (first in 2021, updated 2025–2027), aligned with European Charter for Researchers and HR Excellence in Research award.
VMU	Strategic Plan 2021–2027 integrates GEP with long-term goals: ensuring equal opportunities, non-discrimination, diversity, and inclusivity. Similar principles applied at other Lithuanian universities.
Lan	Builds on UCLan UK's EDI legacy (Athena Bronze Award). EDI Statement 2022–2028 embedded in strategy. EDI Committee (2022) governs progress. Current GEP (2024–2025) focuses on gender balance in leadership, recruitment, work-life balance. Linked with Erasmus+ and Athena Swan Cyprus Charter pilot.
ESTIA	No explicit GEP in the institution's strategy, but obtained DD&RS sustainability label (2024). As part of the label, developing a new social blueprint (2025) to include equality/social matters.

While there are clear institutional progress and increased awareness of gender-related issues, **GEP implementation remains uneven and incomplete across institutions**. The following pages reveal the reasons for this situation.

Following the analysis performed within WP2, ST3AM partners identified the most persistent barriers for an efficient and effective GEP implementation across the institutions: **policy gaps, resource limitations, weak monitoring mechanisms, and inconsistent stakeholder engagement**. They are detailed below.

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4.4.1. Unaddressed Areas:

- **Greece (UNIWA/Innovation Hive):** Absence of clear actions to address gender inequities and lack of gender violence prevention policies.
- **Poland (TUL):** Limited reporting frequency; gender violence prevention only recently included in the new GEP.
- **Lithuania (VMU, VTech, LHSU):** Leading universities (VMU, VU, KTU) show strong frameworks, but smaller institutions lack mentorship initiatives, intersectional analysis, and structured family support.
- **France (ESTIA):** Underrepresentation of women (approx. 30%) in the Administration Council and persistent wage gaps.

4.4.2. Resource Allocation:

- **Strong examples:** TUL (dedicated funding and HR management) and ESTIA (budget for HR-driven initiatives, which efficiency can be questioned however).
- **Weak examples:** UNIWA, UCLan, and smaller Lithuanian universities, where resources are limited or dependent on short-term projects.
- **Key challenge:** Lack of national regulation (e.g., in Cyprus) reduces institutional prioritization and stable financial support.

4.4.3. Stakeholder Engagement:

- **Effective models:** TUL's inclusive GEP team involving multiple staff levels.
- **Moderate engagement:** VMU and VU, which integrate faculty and student participation.
- **Weak engagement:** UNIWA, UCLan, and ESTIA, where staff and employers are not systematically involved.
- **Common issue:** Low involvement from administrators and external partners despite legal obligations.

4.4.4. Monitoring and Evaluation:

- **Strong practices:** Poland and some Lithuanian universities collect and report gender-disaggregated data.
- **Weaknesses:** In Greece, Cyprus, and France, monitoring is inconsistent, and external evaluations are rare.
- **Specific issue:** ESTIA's KPI methodology fails to accurately reflect pay equity due to part-time and transitional employment distortions.

While most partner institutions operate within **legal frameworks that encourage gender equality, these frameworks often lack sufficient enforcement and accountability mechanisms.** As a result, progress tends to rely heavily on institutional commitment rather than formal compliance requirements.

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Financial and structural limitations present another major challenge, particularly for smaller or private institutions. These organizations frequently operate with constrained budgets and limited administrative capacity, which reduces their ability to allocate consistent funding or dedicated personnel to Gender Equality Plan (GEP) implementation.
In addition, data-driven evaluation practices remain underdeveloped across several institutions. This is compounded by **persistent cultural resistance** to fully integrating gender perspectives into research agendas and management structures. Such resistance can slow down institutional change and reduce the impact of existing gender policies.
Finally, the **absence of harmonized indicators and monitoring systems** makes it difficult to compare progress and benchmark results across universities or countries. The lack of shared standards limits opportunities for collective learning, regional cooperation, and the identification of best practices within the higher education sector. In order to enable benchmarking across institutions, the partners assessed their respective practices in focal areas for gender equality, as summarized in Table 6.

TABLE 6: TO BE ADDED

Best Practice Area	Mentorship Programs	Gender-Sensitive Recruitment and Promotion	Awareness and Training Programs	Flexible Work Policies and Family-Friendly Initiatives	Gender-Based Violence (GBV) Prevention
UNIWA/ Innovation Hive	No formal program, only the creation of a gender map is mentioned	Not a detailed approach, only the goal to encourage equal recruitment is mentioned	Limited interviews and a couple of seminars on the matter during the last 4 years.	Comprehensive flexible work policies, parental leave, and childcare support	No formal GBV prevention policy
USN	EDUC Mentoring Programme (staff): pairs a USN employee (mentee) with a mentor from another EDUC-alliance university with a focus on career development and inclusion.	In progress	Regular webinars on gender perspectives in research; requirement to consider gender perspectives in research applications. Female empowerment training (open to staff/PhDs): self-paced EDUC course hosted by USN with certificate on completion.	Comprehensive	"Speak Up" (Si ifra) reporting system: confidential reporting for bullying, sexual harassment, discrimination and other censurable conditions for both staff and students
TUL	No formal program	Yes, structured mentorship program for female students	On-site and online training; anti-mobbing and anti-discrimination topics	Non-Public Preschool of TUL, Non-Public Child Daycare Center of TUL; partial reimbursement of childcare costs for employees provided by a daytime caregiver or nanny.	No formal program
VMU	Partial	Yes	Yes	Yes	Yes
UCLan Cyprus	Yes, through Erasmus+ and in-house mentoring	Inclusive job ads, interview panels, and policy guidelines	Regular events and workshops on EDI and gender equality	Maternity/paternity leave, flexible hours, and well-being support	Comprehensive anti-harassment and grievance procedures
ESTIA	No program	Recruitment practices reviewed and formal gender policy	Occasional diversity training, but not mandatory	Flexible work policies (telewotking), parental leave (by law, for both parents, gender sensitive), no childcare support	Anti-violence policies, awareness campaigns

Recommendations for Institutional Level Actions. To strengthen the implementation and sustainability of Gender Equality Plans (GEPs), several **key actions are recommended at the institutional level.**

Policy Development should remain a top priority. Institutions are encouraged to establish and effectively implement comprehensive **gender-based violence prevention policies**, ensuring a safe and inclusive environment for all members of the academic community. In addition, they should introduce **structured mentorship programs** aimed at supporting underrepresented genders, particularly within **STEM disciplines**, where gender imbalances are often most pronounced. Furthermore, universities should **enhance family support mechanisms**, including access to affordable childcare services, flexible working arrangements, and equitable parental leave options to promote work-life balance.

In terms of **Resource Planning**, institutions should **allocate dedicated budgets** to GEP implementation and designate **Gender Equality Officers or committees** with clear roles and responsibilities. Transparency in financial planning and the integration of gender equality goals into overall **institutional strategic frameworks** are essential to ensure continuity and accountability.

Stakeholder Engagement is another critical area for improvement. It is recommended that universities **establish GEP consultation councils** comprising representatives of staff, students, and management to foster inclusive decision-making. Institutions should also **organize training sessions, awareness campaigns, and outreach activities** to enhance understanding and commitment to gender equality across the academic community. In parallel, **collaboration with employers and external partners** can play a key role in promoting gender-balanced recruitment pipelines and supporting graduates in accessing diverse career opportunities.

To ensure progress is measurable and transparent, **Monitoring and Evaluation** systems must be strengthened. Institutions should **publish annual GEP progress reports** presenting gender-disaggregated data and measurable **Key Performance Indicators** (KPIs). Moreover, it is advisable to conduct **external audits every two to three years**, linking GEP outcomes to broader **institutional quality assurance mechanisms**.

Enhanced **European Cooperation** is also vital. By participating in **shared benchmarking initiatives** within networks such as the *ST3AM consortium*, institutions can harmonize evaluation standards, exchange good practices, and strengthen collective learning at the European level.

Finally, **Sustainable Financing** must underpin all gender equality initiatives. Universities should embed GEP-related funding into their core budgets, reducing reliance on temporary or project-based resources. At the same time, they can explore **EU-funded programmes, partnerships, and impact investment opportunities** to support long-term, gender-focused actions and innovation.

Conclusion. Institutions demonstrate a growing commitment to gender equality; however, substantial disparities persist in implementation and sustainability. The transition from **policy awareness to measurable action** requires stronger leadership commitment, permanent funding, and transparent accountability systems. Embedding gender equality into institutional culture, governance, and evaluation frameworks remains essential to achieving long-term, systemic transformation across higher education institutions in Europe.

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4.5. Consultation Sessions with institutions' female students and faculty members

One of the **main goals of the STE3AM project is to make STEM HE environment safe, familiar, and appealing to all genders**.

Therefore, the main objective of the consultation sessions was to collect numerical and qualitative data about the environments as they are perceived today from a gender-equality perspective, and to analyze them to identify needed adaptations for both the education systems and the Behaviors. This aim has been accomplished through:

> Consultation sessions with STEM HEI faculty members and female students, aimed at gathering further perspectives on gender equality perceptions in HEIs (qualitative) A survey to gather insights on gender equality in HEIs environment from HEI faculty members and female students (quantitative)

This kind of data allows us to **identify psychological and practical factors** that affect the 3As (Attract, Access, and Attain) in STEM education delivery, such as **self-efficacy, bias, stereotyping, and level of understanding and responding to curricula**. The aforementioned specific factors come hand in hand with the general ST3AM philosophy, and their merging of all the gathered quantitative and qualitative data in the ST3AM 3A Blueprint will allow for the deletion of the existing gaps, the creation of new educational pathways, and better knowledge and shared understandings will be communicated.

This conclusion turns all partner results and graphs into one view of where things converge, where they diverge, and what to do first. The dominant signal across sites is a mismatch between *existing* support and *awareness/uptake* of that support, alongside generally good belonging but uneven day-to-day voice in classes and labs.

Awareness is the weakest link everywhere. At USN, 23 out of 34 respondents—about 68% said they didn't know about any anti-discrimination services, even though many also said they would join support programs (13 "yes") if clearly offered, signaling demand, not apathy. In the ESTIA, 28 out of 52, 54% reported no awareness, with a further 22 out of 52, 42% aware but not using services. In the same cohort, 28 out of 52 again 54% said "yes" to mentoring/workshops/networking, confirming untapped appetite. Belonging looks strong but does not guarantee participation: at ESTIA, 38 out of 52, 73% felt they "strongly" belong, yet 16 out of 52, 31% admitted hesitating to speak up at least occasionally due to gender dynamics. Everyday bias remains visible in several sites (e.g., "my smart boys / my beautiful girls," or practical inequities like women needing to change floors to find toilets in a masculinized building), which shows climate frictions persist even where formal barriers feel low.

The graphics below show the results of the sessions conducted at the partners' institutions.

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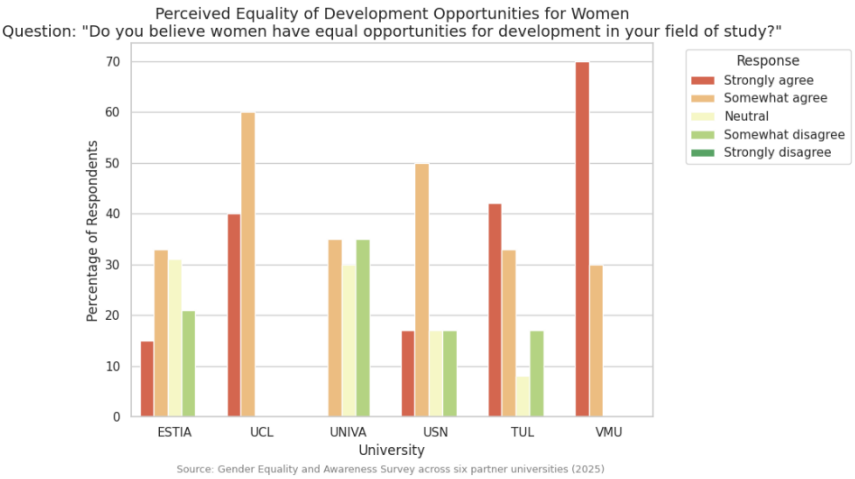

FIGURE 3. PERCEIVED EQUALITY OF DEVELOPMENT OPPORTUNITIES FOR WOMEN

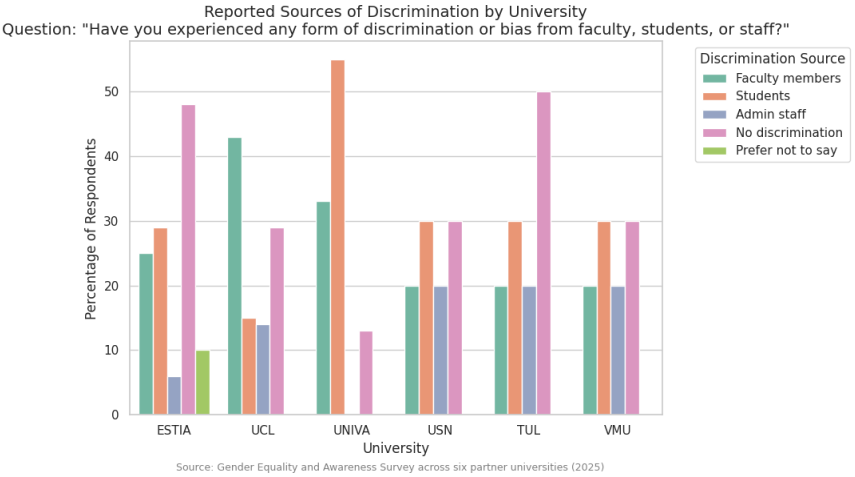

FIGURE 4. REPORTED SOURCES OF DISCRIMINATION AT UNIVERSITIES

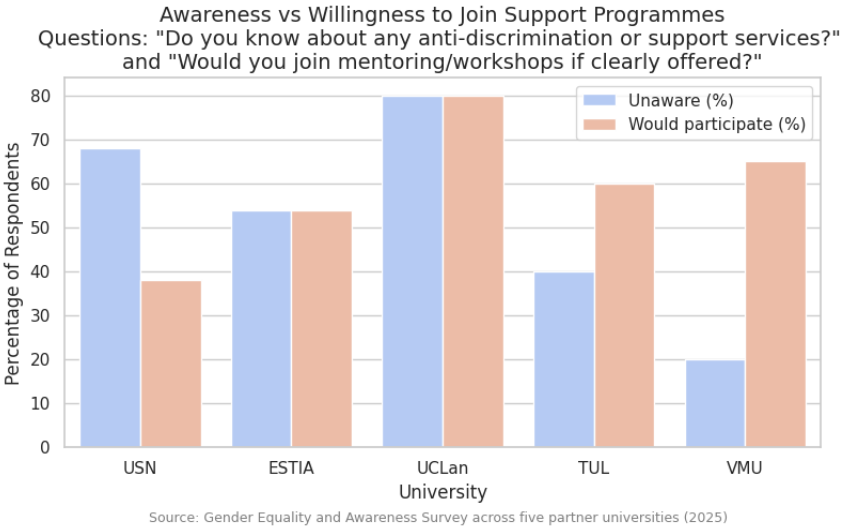

FIGURE 5. AWARENESS VS WILLINGNESS TO JOIN SUPPORT PROGRAMMES

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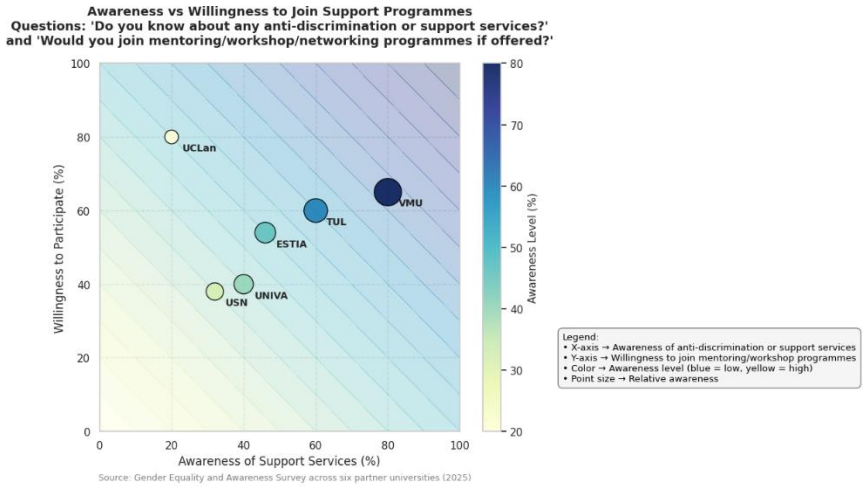

FIGURE 6. AWARENESS VS WILLINGNESS TO JOIN SUPPORT PROGRAMMES (MATRIX)

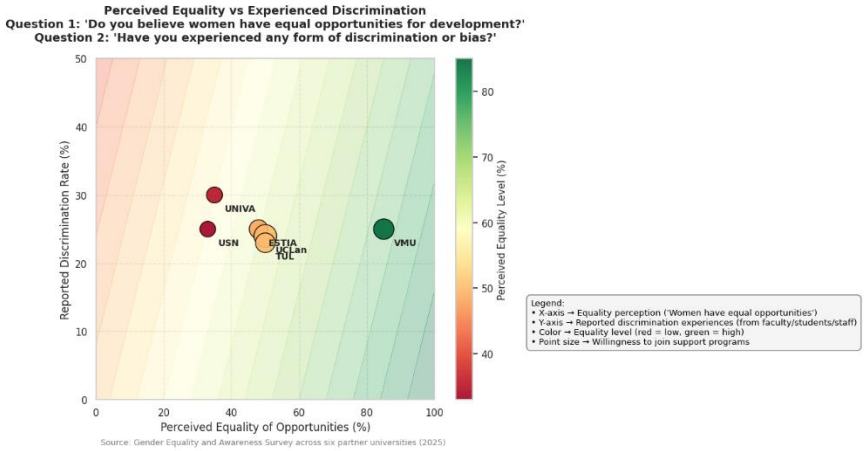

FIGURE 7. PERCEIVED EQUALITY OF DEVELOPMENT OPPORTUNITIES FOR WOMEN (MATRIX)

Differences and a mini-ranking. The ***drivers*** of the gap vary. At UCLan, the bottleneck is an engagement asymmetry: around 80% of staff reported being unaware of support, and staff interest in programs is tepid (40% "not sure," 20% "no"), while 80% of students say they would participate; delivery will stall unless staff buy-in is created. In contrast, USN's main issue is *pure visibility*: two-thirds unaware (23/34) despite clear interest, a classic "build a front door" problem. TUL's friction is cultural and infrastructural: students acknowledge progress but still report microaggressions and facilities gaps that undercut inclusion in day-to-day learning. ESTIA's "family-like" culture is a strength, yet it risks hiding inequality unless leadership names and measures it; their own survey shows strong belonging (73%) but a non-trivial hesitation to speak (31%). Finally, VMU highlights progression pressures: long parental-leave breaks and accessibility/intersectional barriers in labs and policies slow advancement even where women are well represented at entry and mid-levels.

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Taking these differences together, the general priority order is: first, make support *visible, trusted, and easy to access* (because unawareness runs from ~54% at ESTIA to ~68% at USN); second, secure *governance and staff buy-in* where it is weak (e.g., UCLan staff interest lag); third, scale *mentoring/role-model pipelines* to meet clear demand (e.g., ESTIA 54% "yes"); fourth, *engineer classroom/lab participation* to close the belonging-versus-voice gap; fifth, implement *career-reintegration and accessibility fixes* to reduce progression drag.

Recommendations. Start with a single, well-advertised **"front door"** for help one URL and contact then embed a three-touch signposting loop each term (syllabi, LMS banners, lab posters). **Track awareness quarterly** so the percentage of "don't know" falls visibly from baselines like 54% (ESTIA) and 68% (USN). In parallel, **formalize ownership** (an active equality body with response SLAs and public dashboards) and **align incentives** so staff participation rises where it lags (turning UCLan's 40% "not sure" + 20% "no" into "yes"). **Meet the expressed demand** by auto-matching mentors at intake and showcasing alumnae/role models; ESTIA's 54% "yes" is a pragmatic starting target. Finally, **standardize inclusive participation routines** in classes and labs, and add post-leave on-ramps and basic accessibility audits so everyday frictions—and their cumulative costs—drop across the board.

Conclusion. The evidence is consistent: people mostly *want* to belong and participate and often already do but they need a clearer path to support, visible owners, and designed learning spaces. With awareness still above 50% "don't know" in some cohorts and student interest around 54–80% in others, the fastest wins come from making help obvious, making leaders accountable, and meeting demand for mentoring and fair participation. Do those first, and the rest of the system progression, confidence, and culture will move with it.

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5. CONCLUSIONS AND RECOMMENDATIONS

5.1. Main conclusions

Based on cross-countries' dataset (operation of the educational system, STEM related study programs, enrolment patterns, inclusion efforts, sector roadmaps) the **policy and strategic recommendations** were developed referring to the diverse levels – **systemic**, **institutional**, and **study program** – including relevant **country-specific actions** and **key performance indicators (KPI)** for the efficient sector improvement performance.

Cross-Country observations highlight the following:

- **Common strengths:** all education systems offer a full Bologna multi-level STEM programs' pathway (Bachelor–Master–Doctorate) and combine fundamental STEM disciplines with applied, industry-linked learning. Universities use GEPs, mentoring, scholarships, and EU projects to improve inclusion.
- **Growth areas:** data science/analytics, cybersecurity, AI, biotechnology, renewable energy systems, and technology–business programs appear across multiple countries.
- **Gender patterns:** female representation is strongest in life sciences (Lithuania, Poland), data analytics (Cyprus), and visual design/communication (Norway), but remains low in engineering, computing, and advanced manufacturing across most systems.
- **Competitive guidelines:** internationalization (double degrees, joint PhDs, distance learning) is a common strategy to boost global competitiveness.

5.1.1. System-level (national / sector) recommendations:

1. **Target growth sectors with funding & places**
    - Align state-funded seats, grants and tax incentives with sectors flagged as priorities: life sciences/biotech and ICT (AI, cybersecurity, micro/nano-electronics, photonics, space) – especially in Lithuania (5% life sciences VA, 5.1% ICT GDP target).
    - KPI: % of public STEM seats allocated to priority fields; % graduates employed in target sectors within 6–12 months.
2. **Master's acceleration where female participation is higher**
    - Data shows higher female shares at Master's vs Bachelor's (Cyprus, Poland, Norway; selected Lithuanian tech MScs). Expand conversion MScs (for non-STEM Bachelor grads) and stackable PG certificates that ladder into MScs.
    - KPI: female share in new/expanded MSc cohorts; conversion-route completions.
    - **National agreements for social equity** Tie eligibility for public funding to Gender Equality Plans (GEPs) with minimum standards (already common in LT and PL) covering recruitment, promotion, and anti-harassment policies.
    - KPI: institutions with compliant GEPs; % women in STEM leadership and boards.
3. **Cohort tracking & transparency**

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- Standardize a gender-disaggregated data model across admissions → 1st-year continuation → graduation → dropout → employment (Poland already using POL-on; extend to consistent STEM fields, incl. ISCED 068/078).
- KPI: publication of annual dashboards; reduction in gender gap for continuation and completion.

4. **Entrepreneurship & self-employment support (with a gender lens)**
   - Scale DYPA-like instruments (Greece) where ≥60% beneficiaries are women, and replicate incubator grants for women-led STEM start-ups.
   - KPI: # women-led STEM start-ups funded; survival rate at 24 months.
5. **Work-integrated learning (WIL) mandates**
   - Expand industrial placements/sandwich years (Cyprus BEngs, ESTIA double degrees, USN industry links). Prioritize employers in renewables, cybersecurity, AI, biotech.
   - KPI: % programs with WIL; placement-to-job conversion rate.

5.1.2. Institutional ST3AM-related targeted recommendations for the HEIs:

- Introduce at least one **ST3AM-based course or elective** blending STEM with creativity.
- Create a **Women in ST3AM Mentoring Circle** with alumnae and industry role models.
- Run a **Girls in ST3AM Day** for secondary schools including hands-on creative workshops.
- Add **visual and creative storytelling** elements to STEM assessments.
- Launch **female-focused hackathons or innovation labs** that integrate design + tech.
- Ensure every STEM faculty website has a **visibility section featuring women role models**.
- Provide **bias-aware pedagogical training** for faculty in inclusive and creative teaching.
- Introduce **peer-to-peer support** and ambassador programs for first-year female students.
- Include **attendance in gender-equality training** in staff performance criteria.
- Display a **Gender Equality Transparency Dashboard** with progress KPIs.

Study program-level recommendations

1. **Design for employability**
   - Embed vendor certifications (Cisco/AWS/SAS at UCLan Cyprus), double-degrees (ESTIA), and capstone projects with industry data (Cyprus Data Analytics).
   - KPI: certification attainment; employer co-supervised capstones; graduate salary/placement rates.
2. **Flexible delivery & re-entry**
   - Maintain F2F + distance modes in high-demand areas (UCLan Cybersecurity/Data Analytics) to attract career-switchers, carers, and rural students.
   - KPI: female part-time/online enrolment and completion.
3. **Interdisciplinary bridges**
   - Replicate USN's tech-business integration and ESTIA mechatronics/Industry 4.0 to widen appeal; add health-tech options where life-sciences are strong (Lithuania).
   - KPI: female share in new interdisciplinary tracks; employer demand indicators.

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Implementation span

- 0–6 months (Quick wins): outreach calendars, bootcamps, vendor-cert mapping, WIL MOUs, dashboard design.
- 6–18 months (Build): new conversion MScs, scholarships, balanced international recruitment, incubator grants.
- 18–36 months (Scale): expand successful tracks (tech-business, health-tech), tighten funding-to-GEP compliance, publish longitudinal outcomes.

Core KPI set (reportable annually)

- Intake, continuation (Y1→Y2), completion, dropout by gender & field.
- % women in faculty leadership/boards; # women PIs.
- Placement rate (6/12 months), median salary, certification attainment.
- women-led start-ups; internship-job conversion; scholarship uptake.

5.1.3. Why the Arts matter in gender-inclusive STEM

Integrating the Arts into STEM is a strategic lever for gender inclusion. Research shows that girls are more likely to engage, persist, and excel in STEM activities when they include creativity, aesthetics, human-centered design, and social impact. Embedding the "A" in ST3AM not only enriches learning but expands the identity of who belongs in STEM.
Art-related additions on the recommendations could be:
• **Combine engineering and creative expression** (e.g., robotics + storytelling, coding + game design, data + visualization) to attract and retain female students.
• **Use arts-based methodologies** (design thinking, creative problem-solving, visual communication) to create inclusive and emotionally safe learning spaces.
• **Increase representation of women through creative media,** videos, digital storytelling, art exhibitions on "Women Shaping STEM".
• **Encourage interdisciplinary capstones** (e.g., AI + ethics, biotech + art, climate science + communication) that reflect real-world problem-solving.

5.1.4. Moving forward –The responsibility for change needs to be shared

The evidence is clear: targeted action, creative pedagogy, and structural accountability can significantly increase women's participation, success, and leadership in STEM. The next step requires universities to **shift from commitment to action,** by embedding gender equality into their culture, curricula, and governance. ST3AM provides the framework; **implementation and ownership at institutional level will determine the impact for future generations of women innovators.**

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5.2. ST3AM BLUEPRINT RECCOMENDATION FOR ADVANCING WOMEN IN STEM HIGHER EDUCATION AND CAREERS

In summary, let's outline how a comprehensive evidence-informed framework – **a blueprint** – for increasing female participation, attainment, and career success in STEM fields could be described addressing all the set goals in a structured manner. This blueprint integrates insights from six European countries to outline strategic pillars, measurable goals, and mechanisms for sharing best practice education.

At the core of this blueprint lies the ST3AM philosophy: STEM enriched with the Arts. The "A" introduces creativity, emotion, ethics, storytelling, and design thinking into scientific education and careers. This integration transforms STEM into a more inclusive, relatable, and inspiring field, particularly for women, who often value creativity, social impact, and interdisciplinary learning.
ST3AM = STEM + Creativity + Humanity + Inclusion
Through this approach, students don't just become coders, engineers, or scientists -- they become **innovators, problem-solvers, and changemakers** capable of shaping a more equitable future.
The developed framework aims to systematically address the underrepresentation of women in STEM fields within higher education by focusing on six interconnected goals. It emphasizes evidence-based strategies, collaborative efforts, and continuous monitoring to achieve meaningful and sustainable change.

5.2.1. Goals setting

Goal 1: Attract more women to STEM fields in Higher Education

- **Description of strategies.** This goal focuses on increasing the initial interest and desire of females to pursue STEM disciplines in higher education. Strategies will aim to challenge stereotypes, raise awareness of the exciting and impactful nature of STEM, and showcase diverse role models.
- **Key components:**
    - **Early engagement initiatives.** Programs targeting girls in primary and secondary education to foster early interest through hands-on activities, mentorship, and exposure to STEM careers.
    - **Public awareness campaigns.** National and institutional campaigns highlighting the diverse opportunities and societal contributions within STEM, featuring successful women in these fields.
    - **Role model programs.** Creating platforms for female STEM professionals and students to connect with and mentor younger females.
    - **Curriculum enrichment.** Integrating more real-world STEM applications and highlighting the interdisciplinary nature of STEM in secondary education.
    - **Addressing stereotypes.** Actively challenging gender stereotypes associated with STEM through educational materials and outreach activities.

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- **Promoting positive perceptions.** Showcasing the creativity, innovation, and collaborative aspects of STEM fields.

Goal 2: Ensure Equitable Access to STEM Programs for Female Students

- **Description of strategies.** This goal focuses on removing barriers and creating fair pathways for women to enter STEM higher education programs, regardless of their background or circumstances.
- **Key components:**
  - **Inclusive admissions policies.** Reviewing and revising admission criteria to ensure they are fair and holistic, considering a range of qualifications and experiences beyond traditional metrics.
  - **Financial aid and scholarships.** Increasing the availability of scholarships and financial aid specifically targeted towards women pursuing STEM degrees.
  - **Outreach to underrepresented communities.** Targeted outreach efforts to schools and communities with lower rates of female participation in STEM.
  - **Bridging programs.** Offering preparatory courses or support programs for students from diverse academic backgrounds to ensure they are well-prepared for STEM coursework.
  - **Flexible entry points.** Providing multiple pathways into STEM programs, such as through transfer programs from community colleges or alternative qualifications.
  - **Addressing bias in recruitment.** Training admissions staff and faculty on unconscious bias to ensure fair evaluation of female applicants.

Goal 3: Create supportive and inclusive learning environments to enhance female students' attainment and success

- **Description of strategies.** This goal focuses on fostering a positive and welcoming academic and social climate within STEM programs that supports female students' learning, engagement, and persistence.
- **Key components:**
  - **Inclusive pedagogy.** Promoting teaching methods that cater to diverse learning styles and actively engage all students, addressing potential gender biases in instruction.
  - **Mentoring and peer support programs.** Establishing formal and informal mentoring programs pairing female students with faculty and more senior students, as well as creating peer support networks.
  - **Safe and respectful environments.** Implementing clear policies and mechanisms to address and prevent harassment and discrimination, fostering a culture of respect and inclusivity.
  - **Representation in faculty and leadership.** Increasing the visibility and representation of female faculty and leaders within STEM departments.
  - **Curriculum relevance.** Ensuring curriculum content reflects diverse perspectives and includes contributions from female scientists and engineers.
  - **Support services.** Providing access to academic support, tutoring, counselling, and resources tailored to the specific needs of female STEM students.

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- **Building a sense of belonging.** Creating opportunities for social interaction and community building among female STEM students.

Goal 4: Facilitate Successful Transitions into STEM Careers for Female Graduates

- **Description of strategies.** This goal focuses on equipping female STEM graduates with the skills, knowledge, and networks necessary to successfully enter and thrive in STEM careers or pursue further studies.
- **Key components:**
  - **Career development resources.** Providing access to career counselling, resume workshops, interview skills training, and information about STEM career paths.
  - **Internships and experiential learning.** Facilitating access to internships, research opportunities, and other hands-on experiences that build practical skills and industry connections.
  - **Networking opportunities.** Creating platforms for female students to connect with industry professionals, alumni, and potential employers through career fairs, workshops, and networking events.
  - **Leadership development.** Offering programs and opportunities to cultivate leadership skills in female STEM students.
  - **Addressing workplace bias.** Educating students about potential gender biases in the workplace and providing strategies for navigating them.
  - **Alumni networks.** Establishing and leveraging networks of successful female STEM alumni to provide mentorship, guidance, and career opportunities.

Goal 5: Develop Measurable Goals and Indicators to Track Progress in Female Representation and Success in STEM

- **Description of strategies.** This goal focuses on establishing clear, quantifiable metrics to monitor the effectiveness of initiatives and track progress towards greater female participation and success in STEM.
- **Key components:**
  - **Data collection.** Systematically collecting data on female enrolment, retention rates, graduation rates, participation in extracurricular activities, career placement, and leadership roles within STEM programs.
  - **Setting specific and achievable goals.** Establishing measurable targets for increasing female representation at each stage of the academic and career pipeline.
  - **Key performance indicators (KPIs).** Identifying specific metrics to monitor progress, such as the percentage of female students in different STEM fields, the retention rate of female students compared to male students, and the percentage of female graduates employed in STEM fields.
  - **Regular monitoring and evaluation.** Implementing processes for regularly tracking progress against established goals and evaluating the impact of implemented initiatives.
  - **Data-Driven decision making.** Using collected data to inform the development and refinement of strategies and interventions.

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- **Transparency and reporting.** Publicly reporting on progress towards achieving gender equity in STEM to foster accountability and encourage further action.

Goal 6: Promote the Sharing of Best Practices and Effective Initiatives Across Institutions and Countries

- **Description of strategies.** This goal focuses on fostering collaboration and knowledge exchange among universities, research institutions, and national bodies to accelerate the adoption of successful strategies for enhancing female participation in STEM.
- **Key components:**
  - **Establishing network.** Creating national and international networks for sharing information and best practices related to gender equity in STEM.
  - **Organizing workshops and conferences.** Facilitating events for educators, researchers, and policymakers to exchange ideas and learn from successful initiatives.
  - **Developing online platforms.** Creating online resources and platforms for sharing toolkits, case studies, and evaluation reports of effective programs.
  - **Collaborative Research.** Encouraging joint research projects to identify and evaluate the most effective strategies for promoting female participation in STEM.
  - **Policy recommendations.** Developing evidence-based policy recommendations for governments and educational institutions to advance gender equity in STEM.
  - **Dissemination of findings.** Actively sharing research findings and successful program models through publications, presentations, and online channels.

By addressing these six interconnected goals through a comprehensive and data-driven framework, higher education institutions can work towards creating a more diverse and thriving STEM landscape where women are empowered to contribute fully and reach their full potential.

5.2.2. Implementation Framework for shared ownership

Governance & Stakeholders

Strengthening gender equality within the research and innovation ecosystem requires a coordinated governance framework and active engagement of all relevant stakeholders. The following actors play key roles in advancing institutional and systemic change:

- **National Ministries of Education and Research**
  Integrate gender equality requirements into funding mechanisms by linking public financing to the existence and effective implementation of Gender Equality Plans (GEPs), as well as demonstrated progress on relevant gender indicators.
- **Universities and Technical Institutes**
  Establish institutional Gender Equality Committees with clear mandates, decision-making authority, and dedicated budget lines to ensure accountability and sustainability of gender equality measures (e.g. UNIWA, VMU).
- **Industry Partners**

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Actively support gender equality objectives by providing paid internships, mentorship opportunities, and targeted scholarships to women in science, technology, engineering, and mathematics (STEM) fields (e.g. Dassault Aviation in France, Wargaming in Cyprus).

- **Student and Alumni Networks**
  Engage successful female alumni as ambassadors and mentors to promote gender-balanced participation and career progression, building on good practices identified in Cyprus, France, and Poland.

Measurable Goals and Indicators

To ensure accountability and evidence-based progress, **ST3AM partners recommend a comprehensive monitoring framework to be established**. This framework should align with both EU-level gender equality objectives and national implementation contexts. Indicators should be disaggregated by gender and field of study, with annual data collection coordinated through participating institutions and ministries.
The following categories and examples illustrate the main areas of measurement that can be adapted and contextualized at the national and institutional levels:

❖ **Participation**

Monitoring participation focuses on entry points into STEM disciplines. Core indicators include the percentage of female applicants and admitted students in priority fields such as engineering, ICT, and cybersecurity. These metrics help assess the effectiveness of outreach, recruitment, and scholarship initiatives in attracting women to technical disciplines.

❖ **Retention and Attainment**

This category captures success in maintaining and supporting female students once enrolled. Indicators measure first-year continuation rates by gender and average graduation rates, highlighting potential barriers to persistence and degree completion.

❖ **Progression**

Post-graduation outcomes provide a crucial measure of equality in career advancement. Key indicators include the percentage of female graduates employed in STEM sectors within 6 and 12 months after graduation and the median starting salary by gender, allowing for analysis of early career disparities and labor market integration.

❖ **Leadership**

Tracking leadership representation is vital for understanding gender balance in decision-making roles. Indicators measure the proportion of women in academic and research leadership positions, including roles such as faculty deans, research board members, and principal investigators (PIs) of STEM-related projects.

❖ **Engagement**

This dimension captures the scope and depth of participation in gender equality activities. Core measures include the number of active mentors and mentees participating in formal programs,

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as well as participation rates in outreach and awareness-raising events, reflecting institutional and community engagement.

- **Cultural Climate**

Beyond quantitative representation, cultural and institutional climates can be assessed through periodic surveys on inclusivity, perceived fairness, and organizational culture. Data on harassment incidence, satisfaction levels, and perceived support for gender equality will provide qualitative insights to complement statistical monitoring.

The ST3AM Blueprint provides real and empirical data within the partner HEIs, and guides the consortium to address the persistent underrepresentation of women in STEM. **By integrating early outreach, equitable access, inclusive learning, career transition support, and rigorous monitoring, European higher education institutions can move decisively toward gender-balanced STEM ecosystems that fuel innovation and economic growth**.
Looking ahead, WP3 will build upon these findings to promote Gender-Sensitive Pedagogy in STEM classrooms.
ST3AM partners will work to **reform teaching methods** in order for them to be more inclusive and gender-responsive, provide educators with the tools to design equitable lesson plans, empower female students to thrive in STEM fields, **and provide Higher Education Institution (HEI) governance bodies with guidelines to support women's participation and success in STEAM higher education.**

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6. COUNTRY AND INSTITUTIONAL PROFILES

This section comes as a complement to the above synthesis. Indeed, as a result of the work performed at national level, the country reports from **CYPRUS**, **FRANCE**, **GREECE**, **LITHUANIA**, **NORWAY**, and **POLAND** provide a brief understanding of each country's education system and study regulations, specifically concerning STEM disciplines (Science, Technology, Engineering, and Mathematics). **A key focus of the reports is to assess the general situation of female inclusion within STEM-related studies at the national level.**
The reports offer a general overview of the STEM programs available at participating universities across three levels of study: bachelor's degrees, master's degrees and doctoral (PhD) degrees. Particular attention is paid to the specific programs that demonstrate a higher percentage of female student enrolment. For these highlighted programs, the reports include key details such as program duration, entry requirements, areas of specialization.

The reports also outline potential career paths and employment opportunities available to all STEM graduates, with a specific emphasis on those for female graduates. Examples of successful female alumni who have graduated from STEM programs are included to provide real-world illustrations of career possibilities.

The reports incorporate accumulated data from the universities themselves, focusing on the rates and current status of female participation in STEM study programs offered nationally; challenges encountered and solutions implemented to address gender disparities within STEM fields; future career opportunities available to graduates or successful career paths already experienced by graduates between 2020 and 2024.

With the reference to SAGA Indicator Matrix, the datasheets were developed to deliver information referring to certain indicators (saga-toolkit-wp2-2017-en.pdf). The current status of female inclusion in STEM related study programs was based on statistics on female enrolment across different STEM programs over the last 5 years, namely during the period 2020-2024 and including total and share of female admissions, graduations in the first year (how many women continue after the first year of study), total number of graduates per field of study, total number of dropouts and the share of female dropouts. Reports present analysis of trends in female participation compared to male counterparts, identifying insights and/or initiatives undertaken by the universities to promote female participation in STEM fields.

Data collection methods and sources refer to the universities' internal annual reports and/or statistical databases, strategic documents related to education and gender inclusivity at both the university (local) and national levels, information gathered from interviews with institutional personnel, including representatives from the Study Department and International Relations Office, faculty members, current students, and alumni, or relevant publications and other research materials.

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6.1. Cyprus: University of Central Lancashire (UCLan Cyprus)

6.1.1. Statistical Datasheets (Project Activity WP2.2)

General organization of the educational system in Cyprus

The education system in Cyprus is centrally managed by the Ministry of Education, Sport and Youth. Formal initial education is provided through public and private institutions of pre-primary, primary, secondary and higher education, as well as public post-secondary non tertiary institutions. It is compulsory for ages from four years and eight months to fifteen years. Public education is free from the age of four years and eight months to the age of eighteen (MESY, 2023).

Early childhood education and care is organized in two discrete systems based on the children's age, namely the pre-school system and the pre-primary system. Primary education comprises a six-year course of general education beginning at the age of five years and eight months, while secondary education is offered in two different types: secondary general education and secondary technical and vocational education. Secondary general education consists of two cycles of studies of three years duration each cycle, the first one being the Gymnasium and the second one the Lyceum. Secondary technical and vocational education comprises the second cycle of secondary education only and it is open to pupils who have successfully graduated from the Gymnasium.

Post secondary non-tertiary education is offered to graduates of secondary education at the Post Secondary Institutes of Vocational Education and Training. These are public institutes, which started operating in September 2012.

Higher education is provided both at university and non-university level. Universities are academically autonomous bodies. There are four categories of higher education institutions in Cyprus: public universities, private universities, public non-university level institutions and private non-university level institutions (MESY, 2023)

Public universities are founded as public corporate bodies to be academically autonomous governed by their Council and Senate. They are funded by the government, but they can raise money from other sources as well. All public universities in Cyprus are dedicated to excellence of teaching and research. The specific objectives and mission of each university are stated in its respective founding Law. Public universities are multi-faculty institutions, each Faculty made up by Departments. Faculties and Departments are administered by Boards headed by Deans and Chairpersons respectively. They offer academic programs at Batchelor, Master and Doctoral (Ph.D.) level. The Open University offers short professional courses in continuing education as well. The language of instruction is Greek and Turkish - the official languages of the Republic of Cyprus.

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Private universities are founded as private law organizations of speculative or non-speculative character, registered with the Ministry of Education. As provided by Law 109(I)/2005 on Private Universities, the mission of each private university is the advancement of science, knowledge, learning and education through teaching and research for the benefit of society as a whole; the cultivation, transmission, implementation and exchange of knowledge through science; and, the provision of graduate and/or postgraduate education of a high standard that accepts international recognition. Private universities raise their funds from tuition fees.

At the university level there are three public and five private universities in operation, The universities are dedicated to the promotion of scholarship and education through teaching and research, as well as the enhancement of social, cultural and economic development of Cyprus. The three state universities are the University of Cyprus, the Cyprus University of Technology, and the Open University of Cyprus. All three universities offer programs at the Bachelor, Master and Ph.D. level. The private universities are the European University Cyprus; the University of Nicosia; Frederick University; Neapolis University Pafos; and UCLan Cyprus in Larnaca.

At the non-university level there are five public and twenty-five private institutions. Their aim is to offer high-level education and training and produce high-caliber professionals in each respective field, according to the needs of labor market in Cyprus. The language of instruction is English or Greek. More specifically, they offer vocational and academic programs at various levels of study, such as the Certificate level (one-year duration), the Diploma level (two-year duration), the Higher Diploma level (three-year duration), the Bachelor level (four-year duration) and the Master level (one-year or two-year duration). Fields of study cover Secretarial Studies, Business Administration, Banking, Accountancy, Hotel Management, Computers and Engineering. Their programs of study are accredited by the Council for Educational Evaluation and Accreditation (SEKAP).

Adult education is offered in the form of formal education, non-formal education and vocational training. There is an abundance of courses on offer for adults, either in the category of formal, non-formal or vocational education, aiming to satisfy different needs for continuous and lifelong learning. Responsible for adult education and training are mainly the Ministry of Education, Sport and Youth and the Ministry of Labor, Welfare and Social Security. Formal and non-formal institutions of graduate, postgraduate, secondary and vocational level are the providers of adult education and training.

At present, the Republic of Cyprus does not have binding national regulations requiring the implementation of Gender Equality Plans (GEPs) in higher education institutions. This is due to the fact that Cyprus does not have an overall national law on gender equality. However, the country does have sectoral laws on specific aspects of gender equality in areas such as employment, equal work and pay, access to commodities and services, gender-based violence and domestic violence. Furthermore, Article 28 of the Cypriot Constitution of 1960 enshrines the principle of equal treatment and the prohibition of any form of direct and indirect discrimination

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based on gender. In Cyprus, the promotion of gender equality through policy and legislation is a relatively recent phenomenon. Over the past decades, significant steps have been taken toward gender mainstreaming at a national policy level.

A Council of Ministers' decision ensures the government's structure for gender equality with legal standing. Cyprus's 1985 ratification of CEDAW provided the context for the establishment of a permanent government body for women's rights and gender equality, with the Permanent Central Agency for Women being set up in 1988. The National Machinery for the Advancement of Women (NMWR) has been responsible for gender mainstreaming, among other tasks, since 1994. In addition, there is a policy commitment to gender mainstreaming in decision No. 61.649 of the Council of Ministers (2005). Based on this framework, the National Machinery for the Advancement of Women ensures that gender mainstreaming is incorporated into all stages of the utilization of the funds granted to Cyprus from the Structural Funds. It is responsible for evaluating and certifying that projects funded by the Structural Funds comply with national and EU legislation and policies on gender equality. The promotion of gender mainstreaming in the public administration is one of the main priorities of the government of the Republic of Cyprus (European Institute for Gender Equality, 2022).

In line with this commitment, and as a result of Cyprus's harmonization with the EU acquis communautaire, a number of legislative measures related to gender equality were passed. Gender mainstreaming is primarily influenced by EU directives and international conventions for the promotion of gender equality, such as the United Nations (UN) Convention on the Elimination of Discrimination against Women (CEDAW) (European Institute for Gender Equality, 2022). A more recent key development is the National Strategy on Gender Equality 2024–2026, approved by the Council of Ministers and enacted in January 2024. The strategy aims to promote gender equality across all sectors of public life, including education, through a horizontal approach that integrates gender-sensitive practices into government policies (Christodoulou, 2024).

While the strategy does not explicitly mandate GEPs in higher education, it supports gender equality through initiatives that intersect with STEM and academia. Public Policy 7: "Gender, Education and Culture" includes Action 7.1, focused on integrating themes such as empathy, gender equality, and respect into educational content, and Action 7.2, which supports training for career advisors and educators to challenge gender stereotypes (Office of the Commissioner for Gender Equality, 2024). These initiatives create an enabling environment for universities to embed gender equality practices, including the formulation and implementation of GEPs. Additionally, Cyprus is aligning with European gender equality frameworks through the recent adoption of the Athena Swan Cyprus Charter, which encourages institutions to assess and enhance their gender equality policies, particularly within research and STEM fields (Advance HE, 2024). The Charter promotes inclusive cultures, sustainable change, and robust governance practices in higher education.

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On the other hand, there are not any funding or accreditation status requirements that mandate higher education institutions to implement GEPs. Yet, the Cyprus Agency of Quality Assurance and Accreditation in Higher Education adopts the policy of equitable balance between men and women, as far as practicable, in the External Evaluation Committees, and in its activities. The Agency urges the Higher Education Institutions to develop policies for gender equality and for equal opportunities between women and men. Given also the key role that language plays in shaping attitudes, gender-inclusive language can contribute to attitudes' changing and gender equality (Cyprus Agency of Quality Assurance and Accreditation in Higher Education, 2021). It must be stressed at this point that the lack of any specific requirements, especially in relation to funding, is a general issue that applies to all sectors. However, action aimed at securing the adoption of gender budgeting in the future is underway. A Gender Mainstreaming Handbook and Action Plan for public administration were approved and announced at the end of 2018 and training of a limited number of selected public administrators followed in 2019. While the Handbook and Action Plan include elements of gender budgeting, this has not been supported by the adoption of a clear policy on gender budgeting in the public sector and the development of expertise and know-how. As a result, it cannot be claimed that gender budgeting is understood or implemented at any level, and at any sector (Republic of Cyprus, 2019).

Overview of nationally offered STEM-related study programs in UCLan Cyprus

General overview

UCLan Cyprus is located in Larnaka, and it is now in its thirteenth year of operation. It is the first Branch Campus of the University of Lancashire and at the same time a fully licensed University in Cyprus. A unique and innovative model of a Cypriot and British University Educational Experience, accredited by the UK Quality Assurance Agency and the Cyprus Agency of Quality Assurance and Accreditation in Higher Education (CYQAA) respectively. Built on strong academic foundations, the University of Lancashire (UCLan UK), our mother University, counts more than 190 years of history and is considered among the top 6.5% of all worldwide Universities by the Centre for World University Rankings (CWUR) 2020/21. UCLan Cyprus operates under the academic umbrella of UCLan UK, and further to the latest political changes of the United Kingdom's exit from the European Union (BREXIT), it is considered a unique University, bridging the UK and Europe in terms of research, academic standards, student experience and student exchange. The completion of studies at UCLan Cyprus will result in a double-awarded degree (two certificates) from the two Universities, UCLan UK and UCLan Cyprus, recognized not only in Cyprus and UK, but also across Europe and beyond. In addition, many of the offered courses are accredited by professional and statutory bodies, ensuring the standards expected by today's businesses for all UCLan Cyprus students.

The socioeconomic impact of UCLan Cyprus is derived either through knowledge creation, innovation, research and development, or via the direct and indirect income streams flowing into the surrounding economy. The University is the first and only University in Larnaca and

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Famagusta region, and one of the biggest employers in the region with over 210 employees. In just a few years of operations, the value-added contribution of UCLan Cyprus has been significant. During the last years of low economic growth in Cyprus and Larnaca, the impact of student and employee activity, much of it occurring after traditional business hours, have helped to revitalize the economy through economic stimulus. The strategic vision of UCLan Cyprus is to build a leading, pioneering University campus, with a global reach at the crossroads of three continents (Europe, Asia and Africa), ensuring excellence in its provision of Higher Education, while it will be recognized for its commitment to the finest University experience, outstanding research, innovative learning and valuable engagement with industry and communities within Cyprus, the Eastern Mediterranean, the Middle East and further afield (UCLan Cyprus, n.d.).

School of Business and Management

This report, as part of the ST3AM project, will focus on the School of Business and Management, where the UCLan Cyprus ST3AM team is currently employed. The School of Business and Management is the most enterprising School of UCLan Cyprus. Its mission is to offer practical and professionally relevant courses that equip students with knowledge, experience, analytical skills and enhanced aptitudes which are in high demand in the marketplace. A key measure of success is for graduates to enjoy employability in managerial, professional and entrepreneurial pathways, contributing thereby to social and economic development. Everyone at the School is committed to contribute to learning and the knowledge economy via an extensive range of Undergraduate and Postgraduate courses that seek to expose students to cutting edge developments in their fields of study. Also, in co-operation with UCLan UK and other partners, the School offers doctorate and continuing professional development programs that aim to establish the researchers of the future and highly employable professionals. The Faculty strives for excellence in learning, teaching, research and in building partnerships with various stakeholders, seeking to unlock growth opportunities in business, management and entrepreneurship. In relation to this, the School has built an important partnership with the Centre for Entrepreneurial Development Alliance and Research – CEDAR, which is a not-for-profit organization that promotes entrepreneurship across all walks of life.

The School's departments offer the following academic programs of study: five undergraduate programs, namely, BA (Hons) Accounting and Finance; BA (Hons) Advertising and Marketing Communications; BA (Hons) Business Administration; BA (Hons) English Language & Literature; BA (Hons) Hospitality and Tourism Management, and four postgraduate programs, namely, MBA Master in Business Administration; MBA Master in Business Administration (Distance Learning); MA Hospitality, Tourism & Events Management; and MSc Human Resource Management (UCLan Cyprus, n.d.).

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Information on programs' duration, entry requirements, and specializations

All the study programs of UCLan Cyprus, including the programs under the School of Business and Management, are accredited by the UK Quality Assurance Agency and the Cyprus Agency of Quality Assurance and Accreditation in Higher Education (CYQAA) respectively, thus, following the guidelines from the Cyprus government policy for Higher Education, in line with the Cyprus Ministry of Education, Sports, and Youth (MESY) (MESY, n.d.). In addition, the completion of studies at UCLan Cyprus results in a double-awarded degree (two certificates) from the two Universities, UCLan UK and UCLan Cyprus, recognized not only in Cyprus and UK, but also across Europe and beyond.

The duration of all programs at a Bachelor level is four years. The programs BEng (Hons) Computer Engineering, and BEng (Hons) Electrical & Electronic Engineering, offer students the opportunity for an additional Sandwich Year for Industrial Placement. Programs at Master level have a duration of 1 year (3 semesters). To complete a Bachelor's degree, the student must have obtained 240 study credits (60 credits per academic year). The successful completion of Master's programs require 90 credits, in total (30 credits for the Master's Dissertation).

The entry requirements for Bachelor's programs are a High School Leaving Certificate or 96 A' Level points (new Tariff system) in relevant subjects. In addition, a Certified Proof of English Language knowledge to a score of at least IELTS 5.5 or equivalent according to the Common European Framework of Reference for Languages (CEFR). The entry requirements for Master's programs are a bachelor's degree in a related area of study, with at least a Lower Second Class grade or equivalent. In addition, a Certified Proof of English Language knowledge to a score of at least IELTS 6.5 or equivalent according to the Common European Framework of Reference for Languages (CEFR) is required. For applicants who do not have an accredited English language qualification, the university offers a recognized English language Admissions test, as well as Intensive English Language courses which aim to enhance their English level in a short period of time.

Current Status of female inclusion in STEM-related study programs (statistics)

This section presents collected data about the current status of female inclusion on some of the key-targets as specified in the ST3AM Statistical Datasheets Report. Our data and statistics were drawn from the specific period of time, 2020-2024, and include student admission/enrolment, successful completion of the first year of study, graduation, and dropout, rates, across all STEM-Related Study Programs offered at UCLan Cyprus.

Overall, for gender distribution and engagement in STEM-Related Study Programs offered at UCLan Cyprus, our findings show a significantly higher male enrolment, accounting for 81%, with shares of females below 20%. In relation to this, there is a clear consistency in student admissions per gender across academic years for the time period under study. Yet, data across postgraduate (Master's) students only, show much higher female enrolment rates, accounting for 28%. Similar

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are the findings about the successful completion of the first year of study, with a 83% male, and only 17%, female, share. On the other hand, an interesting and important finding is that female students do not usually dropout from their studies. More specifically, female dropout students account for only 14%, whereas, males, for 86%. Relatively similar are the findings for Master's programs, with a 79% dropout share for males, and 21%, for females. This pattern is consistent with findings from other countries, according to which female dropout rates are lower or the same as male dropout rates. Findings regrading graduation, show a significantly higher rate for male, accounting for 81.5%, with a 18.5% female share. Yet, data across postgraduate (Master's) students only, show a higher female share, accounting for 25%.

As this data concern private higher education in Cyprus, which has high tuition fees, the number of dropouts could be also explained by financial reasons, including the fact that a proportion of students have to work in parallel with their studies to pay their fees, and at some point they become less and less engaged with their studies, due to job commitments and limited time, which, in turn, results in the decision to drop out.

Although both at an undergraduate (Bachelor's programs), and postgraduate (Master's programs), levels, and across all programs of study, the data show that the participation of female students is lower compared to male students, yet, in Master's programs, the gender gap is smaller, compared to Bachelor's programs. In relation to this, the smallest gap in Bachelor's programs have been identified in Mathematics and Statistics, in which, female participation is approximately 43% over the 2020-2024 time period. The largest gap concerns Engineering and engineering trades, where the female share accounts for only 11%. Regarding Master's programs, the smallest gap has been identified in Information and Communication Technologies (ICTs), and, more specifically, in the program MSc Data Analytics, in which female participation is approximately 45%, over the 2020-2024 time period. On the other hand, this large share of female students, shows a significant decline during the most recently recorded academic year, 2023-2024, with a 36% share. The largest gap has been identified in Information and Communication Technologies (ICTs), and, more specifically, in the program, MSc Cybersecurity, in which the share of female students accounts for 24%. It must be added here that although female participation was higher than male participation, in 2021-2022, accounting for almost 55%, this share has been significantly dropped to 23%, in the 2023-2024 time period. Finally, and regarding outbound mobility, there are not any significant gender differences.

Future Career Opportunities for Graduates

The career paths and employment opportunities available for UCLan Cyprus graduates do not differ between females and males. All graduates enter the labor market, holding a university degree of the same value, thus, having the same career opportunities, at least theoretically, considering that the actual available employment opportunities offered to each graduate, depend on the specific companies, in each sector. The same applies to all STEM graduates. Regarding the latter, the list below includes some indicative career paths and employment

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opportunities for UCLan STEM graduates, for each program of study, both at a Bachelor's, and, a Master's, level:

Bachelor's Level

BSc Mathematics and Statistics: Overall, the BSc (Hons) Mathematics and Statistics program provides students with sufficient in-depth knowledge to enable them to embark on further studies or apply that knowledge in the industry. Graduates of mathematical sciences can be employed in several areas, such as education, biology, economics, engineering, genetics, marketing, medicine, psychology, public health and sports, and work as statisticians, data analysts, risk analysts, biostatisticians and quality analysts, amongst others.

BSc Computing: The program's diverse curriculum and highly practical focus equip our graduates with the necessary skills to have a successful career in the industry. Graduates are also eligible to register to the Cyprus Scientific and Technical Chamber (ETEK). Overall, the program is proud of its high student satisfaction rate, internship and placement offerings, technology-enhanced learning environment, high employability rate, and industry collaborations.

BEng Computer Engineering: Overall, the program equips graduates with the knowledge, practical skills and confidence to thrive and develop to gain suitable employment in the rapidly changing world of Computer engineering. The skills gained on the program are also transferable to a diverse set of industrial and commercial sectors.

BEng Electrical and Electronic Engineering: Employability is central to our degree provision and through this program students will develop the necessary electrical and electronic engineering skills, as well as transferrable skills to ensure their successful career in this field. Course delivery allows students to concentrate in their chosen area depending on module choices, including Telecommunications, Mobile Technologies, Renewable Energy Systems, Digital Design, Electronics and Power Systems. This ensures their studies are shaped to suit their career aspirations. Course Graduates are also eligible to register to the Cyprus Scientific and Technical Chamber (ETEK).

Master's Level

MSc Computing: Through specific modules, the MSc in Computing program provides students the opportunity to achieve professional certifications that are in great demand by the industry, such as Cisco, CCNA, AWS Cloud Essentials, and LPI Essentials. In parallel, the program focuses on the development of other essential skills, such as communication skills, critical thinking and self-management skills, which can be applied in various industry sectors.

MSc Cybersecurity (F2F and DL): Typically, graduates of the Cybersecurity postgraduate program can be employed by telecommunication, IT and technology companies, network operators and network equipment vendors, consultancy agencies and government departments, as well as any other organization that needs to protect its IT infrastructure and operations. Cybersecurity is part of nearly every discipline from defense and intelligence to healthcare and aerospace.

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MSc Data Analytics (F2F and DL): In addition to their MSc award, UCLan Cyprus MSc Data Analytics graduates have the option to receive the SAS Joint Certificate in Business Intelligence and Data Mining. The SAS Joint Certificate equips students with additional knowledge and skills to apply analytics to real business problems using real business data and provides students with a competitive advantage in the marketplace, through a professional certification which is in high demand by the market. The combination of the MSc Data Analytics program and the SAS Joint certificate curriculum prepare graduates to work in a data-rich business environment and have a rewarding career in the digital age.

6.1.2. Readiness of Gender Equality Plans (GEP) (Project Activity WP2.3)

Contextual background

National Requirements

The Republic of Cyprus does not have specific national-level study regulations dedicated exclusively to the STEM approach. However, the STEM perspective has been integrated within the National Strategy on Gender Equality 2024-2026, which was approved by the Council of Ministers and came into effect at the start of January 2024. The Strategy aims to promote gender mainstreaming in public policies and outlines a wide range of thematic areas, with numerous actions and policies to be implemented by the government over a three-year period (2024-2026). This comprehensive strategy emphasizes the importance of gender equality across various sectors, including education and employment (Christodoulou, 2024).

In particular, the STEM approach aligns with Public Policy 7 of the Strategy, titled 'Gender, Education, and Culture: Formulation of a Gender Educational and Cultural Ethos'. Within this framework, Action 7.1 focuses on enriching educational program content with initiatives that promote empathy, gender equality, the prevention of violence against women, consent, and mutual respect. Furthermore, Action 7.2 aims to implement training programs for career advisers and educators to address gender stereotypes and promote equality among genders. These actions support the advancement of female participation in STEM fields by fostering a more inclusive and gender-balanced educational environment (Office of the Commissioner for Gender Equality, 2024).

Institutional Context

In its Equality, Diversity, and Inclusion (EDI) Statement 2022-2028, UCLan Cyprus acknowledges the existence of inequalities not only in the higher education sector but also within the university itself and across Cyprus more broadly. The University emphasizes specific challenges, including the under-representation of female students in certain STEM disciplines. In response to these challenges, UCLan Cyprus established the EDI Committee in 2022 to oversee and drive the university's commitment to fostering an inclusive and equitable academic environment. Following the guidelines set forth in the EDI Statement, the committee has developed a

comprehensive plan addressing all areas of the university's operations, identifying specific EDI targets and objectives to be achieved over the next five years. The EDI Committee is tasked with ensuring the implementation of these objectives, which include promoting gender equality across students and staff recruitment, particularly within STEM fields. Additionally, the university's 2024-2025 Gender Equality Plan aims to ensure equal opportunities for both students and staff, with a strong focus on reducing gender disparities in all academic areas, including STEM (UCLan Cyprus, 2024).

Current State of GEP at UCLan Cyprus

Public Availability and Transparency

The UCLan Cyprus GEP and EDI Statement are publicly available through the university's official website (UCLan Cyprus, 2024). These documents outline the institution's strategic priorities and measurable targets concerning gender equality. Public accessibility ensures transparency and reflects the university's accountability to students, staff, and the broader academic community.

Scope and Coverage

UCLan Cyprus's approach to gender equality is holistic, addressing several core areas through policy and practice:

- **Leadership Representation:** The University aims to ensure balanced representation of genders in decision-making bodies. Although gaps remain, the EDI Plan identifies this as a core target area.
- **Recruitment and Career Progression:** The University's recruitment policies promote fair and inclusive practices. Job descriptions are gender-neutral, and recruitment panels are encouraged to reflect gender diversity. Targets within the EDI Plan include increasing female representation in male-dominated disciplines, particularly in computing and engineering.
- **Gender-Based Violence (GBV) Policies:** UCLan Cyprus has a robust Sexual Harassment Policy, outlined in the Employee Handbook (2024), which includes complaint mechanisms, protection against retaliation, and investigation procedures aligned with national law and EU directives.

Regarding intersectionality and accessibility, the EDI Plan also commits to intersectional approaches, ensuring that gender equality efforts are inclusive of all social identities, including race, ethnicity, and disability.

Implementation and Governance

Organizational Structure for GEP Implementation

The EDI Committee at UCLan Cyprus was established in 2022 to oversee the implementation of gender equality and inclusion practices. The committee reports directly to senior management

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and plays a central role in shaping the university's GEP. It is composed of academic, administrative, and student representatives, reflecting an inclusive governance model.

Monitoring and Accountability

Progress is monitored through key performance indicators outlined in the EDI Plan. These include data on gender representation in leadership, staff recruitment, and student enrolment. The EDI Committee reviews this data annually and produces internal reports with recommendations. Monitoring remains primarily internal but aligns with frameworks such as Athena Swan for external benchmarking.

Best Practices in GEP Implementation

Mentorship and Empowerment Projects

UCLan Cyprus actively participates in several Erasmus+ projects that focus on the empowerment and mentorship of women in STEM-related fields, including finance technology, artificial intelligence, and mental health in STEM education. These projects provide opportunities for female students and early-career researchers to build networks, develop skills, and engage with professional role models, contributing to a more inclusive and supportive learning environment.

Gender-Sensitive Recruitment and Promotion

UCLan Cyprus promotes gender-sensitive recruitment and promotion practices through its Equal Opportunities Policy and inclusive HR procedures. Job descriptions and advertisements are designed to be gender-neutral and inclusive, and efforts are made to ensure balanced gender representation on recruitment panels. Promotion criteria are transparent and based on merit, with considerations for potential career interruptions such as maternity leave or caregiving responsibilities, in alignment with the university's EDI targets and commitment to equity (UCLan Cyprus Employee Handbook, 2024).

Training & Awareness

The university organizes regular workshops, seminars, and awareness-raising events aimed at addressing gender-stereotypes, promoting inclusive leadership, and enhancing work-life balance for both staff and students. These initiatives are designed to foster a campus culture of respect, inclusion, and gender equity while equipping participants with the skills and understanding needed to contribute positively to an inclusive academic community.

Family-Friendly Policies

UCLan Cyprus demonstrates a strong commitment to supporting the well-being and work-life balance of its staff through comprehensive family-friendly policies. The Employee Handbook (2024) includes provisions for maternity, paternity, and parental leave, as well as flexible working arrangements and access to psychological counselling services. These policies are designed to ensure that all employees, regardless of gender, can balance their professional responsibilities with personal and family commitments.

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Gaps, Challenges, and Recommendations

Gaps and challenges in GEP Implementation

- **Lack of National Regulation:** No formal mandate requiring GEPs from the Ministry of Education. This is a particularly important challenge, especially when considering that the lack of national regulation on this matter is wider and concerns all sectors. Therefore, progress needs to be made at a more general level, and across all sectors first, which will in turn influence progress in specific sectors, such as Education.
- **Limited External Benchmarking:** While internal mechanisms are in place, external evaluation is still emerging. The main consequence of limited external benchmarking is that there are not any available reliable benchmark data that could be discussed and analyzed within higher education institutions, and help inform activities, respectively.
- **Resource Constraints:** Financial and human resources for EDI activities are limited and often reliant on project funding. This challenge is directly related to the lack of national regulations mentioned above. Without any formal mandate requiring GEPs from the Ministry of Education, the individual institutions do not prioritize gender equality, when it comes to the allocation of resources, and especially of their financial resources. This can become even more problematic in a period when budgeting is a major concern of the higher education sector, not only in Cyprus, but at a global level, and particularly for private universities.

Recommendations

- Align more closely with Athena Swan Cyprus Charter principles to strengthen institutional credibility. Since this is a three-year pilot project, it is crucial that the promotion of gender equality with higher education institutions in Cyprus, will continue after the completion of the project, with several other initiatives.
- Increase staff training on gender mainstreaming in curriculum development and research. Gender equality training can create efficient actions and positive changes. In line with this, emphasis should be put on designing effective forms of training, and activity that is complex, as it is not isolated from the existence of a legal policy framework, and the allocation of sufficient resources (European Institute for Gender Equality, 2016). In fact, it requires both.
- Formalize performance indicators and link GEP outcomes to institutional quality assurance processes. This formal link between GEP outcomes and quality assurance processes will put more pressure on higher education institutions to prioritize GEP, both in general, and, in relation to financing, in particular. For instance, the accreditation of a study program will not be possible without the effective implementation of gender equality practices, within a university department or school.

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- Develop external partnerships (e.g., with NGOs or the Commissioner for Gender Equality) for shared learning and benchmarking. Setting external benchmarks in particular will definitely help higher education institutions in Cyprus to assess their performance in achieving their DEI aims, including gender equality, and will empower employers to bring about positive change for women in the workplace.
- Increase financial resources for EDI activities. This is probably more feasible within public universities, compared to private higher education institutions, which do not receive government funding, and their financial sustainability largely depends on tuition fees. Despite these challenges, the number of investors showing interest in different types of commercial and development finance for gender equality (e.g., impact investing, blended finance and philanthropy) is rapidly increasing, as are the approaches used to assess what constitutes “gender investing” (OECD, 2020).

6.1.3. Consultation Sessions (Project Activity WP2.4)

Key conclusions from the meeting with faculty

Academics who participated in the focus-groups emphasized the necessity of specific priority actions, addressed key challenges, and offered some key recommendations to tackle gender inequality in STEM disciplines. They stressed, for instance, that leadership must model inclusive values and support long-term cultural change. They also suggested involving both male and female colleagues in gender equality initiatives to avoid isolating the conversation as a "women's issue." As a result of the meeting with faculty members, several actions, challenges, and needs were identified, prioritized, and highlighted, across all university levels, and with the involvement of many different individuals:

Goals - Priority Actions

- Strengthening institutional policies on equality and inclusion, especially around hiring and promotion.
- Enhancing leadership accountability for gender equity.
- Increasing research funding opportunities that support gender-focused STEM studies or women-led projects.
- Promoting transparent career progression pathways, especially post-PhD.

Cliffs – Challenges

- Unconscious bias during recruitment, project assignment, and committee appointments.
- Lack of support for work-life balance, particularly for women with caregiving responsibilities.

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- A “leaky pipeline” in academia, where fewer women are promoted to senior positions.
- Gendered assumptions about roles in team projects and classroom management.

Needs – What’s Required

- Institutional mentoring and sponsorship schemes for early- and mid-career female academics.
- Improved data collection and monitoring of gender representation at all levels.
- Formal training on bias mitigation for recruitment committees.
- Recognition of non-traditional contributions (e.g. mentoring, outreach) in promotion criteria.

Key conclusions from the meeting with students

Students who participated in the meeting, first of all, expressed their appreciation for having heard their voices, especially in relation to such an important and current issue. They also stressed that they would like further opportunities to participate in shaping gender-related initiatives. In addition, they emphasized the importance of linking GEP efforts with career development support and internships in relevant industries. As a result of the meeting with them, several specific priority actions, challenges, and needs were also identified and highlighted, as follows:

Goals – Priority Actions

- Raise awareness of gender bias within STEM courses and labs.
- Introduce gender equality training for both students and academic staff.
- Improve the visibility of female role models in STEM fields, including alumni success stories.
- Create structured mentorship programs for women pursuing technical careers.

Cliffs – Challenges

- Subtle but persistent gender stereotyping, especially in male-dominated technical areas.
- Feelings of impostor syndrome and lack of confidence in labs or group work.
- A lack of female representation among teaching staff in STEM disciplines.
- Difficulty in accessing career guidance tailored to women entering male-heavy industries.

Needs – What’s Required

- Create inclusive classroom environments where gender bias is actively addressed.
- Offer networking events with industry professionals, especially women in STEM careers.

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- Provide training and support structures that help women navigate both academic and professional expectations.
- Encourage student-led initiatives and female STEM societies on campus.

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APPENDICES

TABLE 7 GENDER BALANCE – STUDENT ADMISSION, GRADUATION, AND DROPOUTS IN STEM FIELDS

Admissions	**Males**	**Females**	**Males %**	**Females %**
2020-2021	49	13	79	21
2021-2022	58	12	83	17
2022-2023	71	16	82	18
2023-2024	76	18	81	19
Total	254	59	81	19
Number of Graduates				
2020-2021	48	12	80	20
2021-2022	25	6	81	19
2022-2023	33	7	82.5	17.5
2023-2024	44	9	83	17
Total	150	34	81.5	18.5
Number of Dropouts				
2020-2021	54	17	76	24
2021-2022	25	0	100	0
2022-2023	18	0	100	0
2023-2024	17	1	94.5	5.5

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Total	114	18	86	14

TABLE 8. UCLAN CYPRUS GEP COMPREHENSIVENESS MATRIX

Leadership Representation	Recruitment and Career Progression	Gender-Based Violence Policies	Public Availability	Comprehensiveness
Moderate	Strong	Strong	Yes	Detailed

TABLE 9. UCLAN CYPRUS MONITORING AND ACCOUNTABILITY MATRIX

Monitoring Mechanisms	Performance Indicators	Frequency of Reports	Accountability Structures	Gaps
Annual review (internal)	Yes	Annual	EDI Committee	Limited external oversight

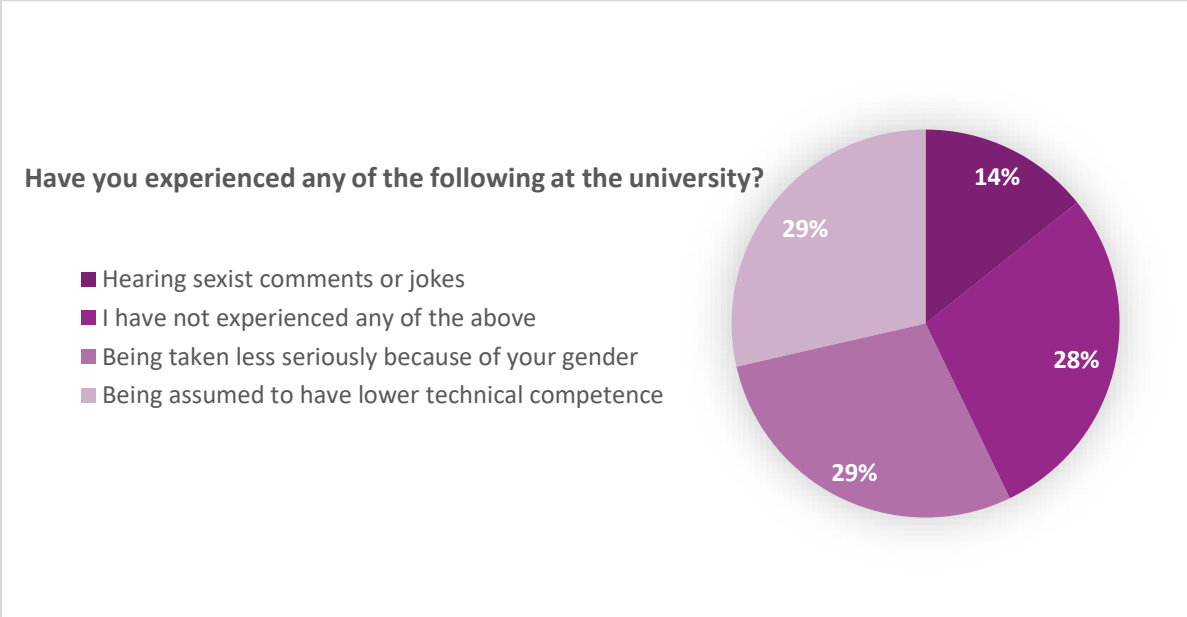

FIGURE 8. UCLAN – EXPERIENCED DISCRIMINATION AT UNIVERSITY

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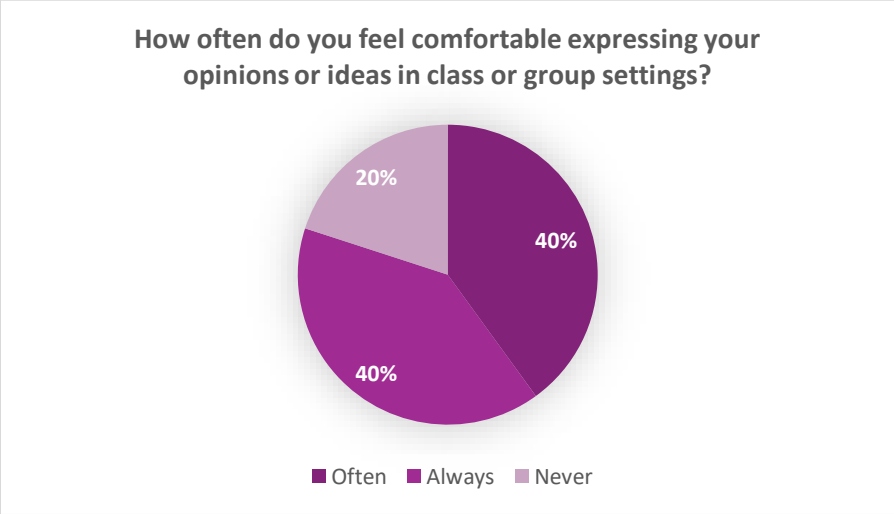

FIGURE 9. UCLAN – EXPERIENCE ABOUT EXPRESSING OPINIONS AS A WOMAN

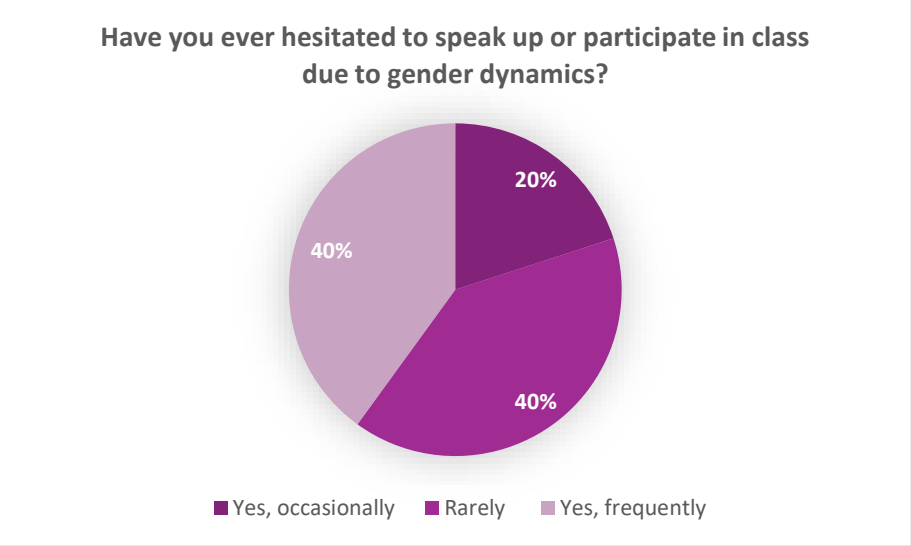

FIGURE 10. UCLAN – EXPERIENCE ABOUT SPEAKING UP IN CLASS AS A WOMAN

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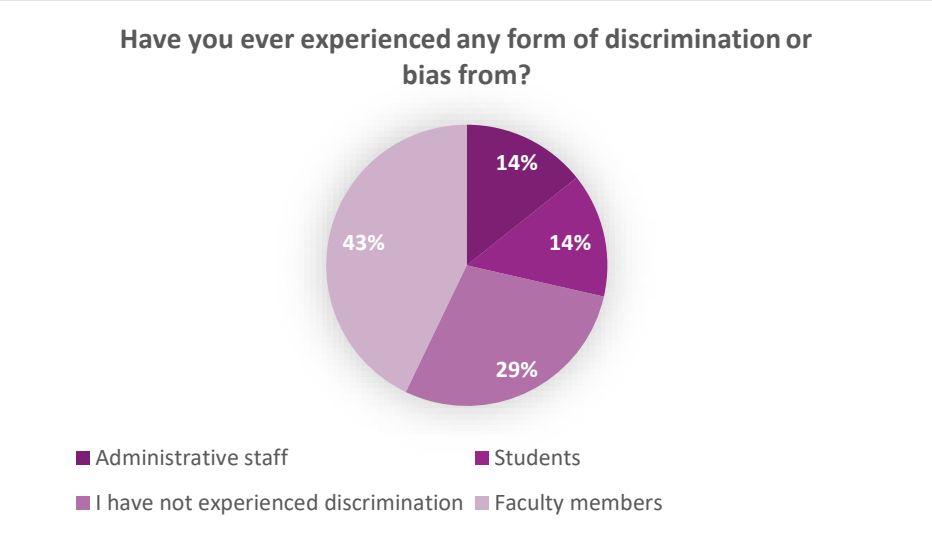

FIGURE 11. UCLAN – EXPERIENCE ABOUT DISCRIMINATION

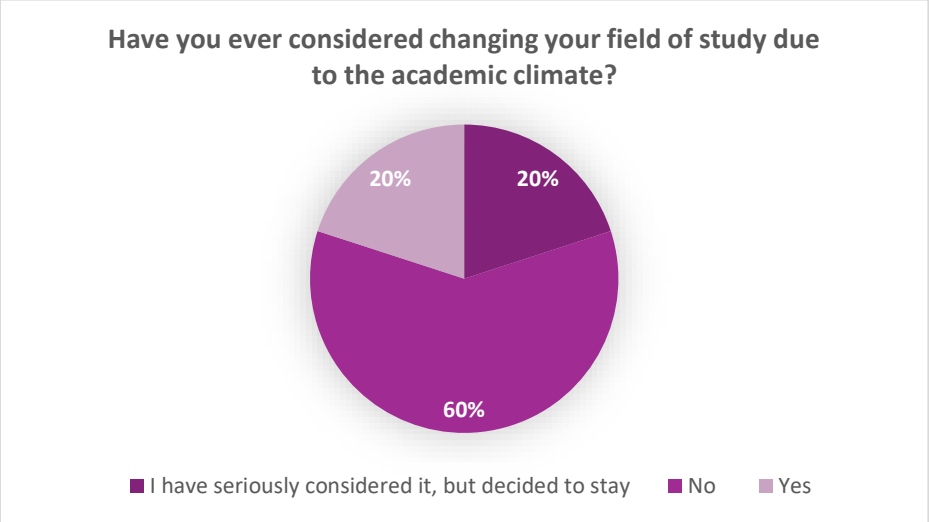

FIGURE 12. UCLAN - ACADEMIC CLIMATE LEADING TO CHANGING FIELD OF STUDY

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6.2. France: Advanced Industrial Technologies Superior School (ESTIA)

6.2.1. Statistical Datasheets (Project Activity WP2.2)

General organization of the educational system in France

The French educational system is governed by the Education Code and structured into several levels: primary school, middle school, high school, and higher education. The STEM approach (Science, Technology, Engineering, Mathematics) is gradually integrated into various educational pathways to strengthen students' scientific and technological culture.

At the secondary level, STEM education is strongly encouraged through the 2019 reform of the general baccalaureate, which replaced the previous tracks (S, ES, L) with a specialization system. Among these specializations, mathematics, physics-chemistry, life and earth sciences (SVT), and engineering sciences play a central role in access to higher STEM studies (Ministry of Higher Education and Research, 2023).

In higher education, studies follow the Bachelor's-Master's-Doctorate (LMD) framework. STEM programs are offered in various types of institutions: universities, engineering schools, university institutes of technology (IUT), and preparatory classes for elite schools (CPGE). Numerous policies have been implemented to encourage research and innovation, notably through the "France 2030" Plan, which aims to strengthen the competitiveness of French scientific research (France 2030 Plan, 2021).

General Situation of Female Inclusion in STEM Studies in France

The inclusion of women in STEM programs remains a major issue in France. While the proportion of female students in life and earth sciences is relatively high, it remains low in disciplines such as mathematics, computer science, and engineering. According to data from the Ministry of Higher Education and Research (2023), women represent approximately **28% of students in engineering schools** and **15% in computer science**.

Despite several efforts ("Girls and Math: A Bright Equation" program, organized by the association "Femmes et Mathématiques" (2022), gender stereotypes persist and continue to hinder young girls' access to these careers. It is therefore essential to strengthen awareness and support actions throughout the school and university journey (National Institute of Statistics and Economic Studies, 2023).

Overview of nationally offered STEM-related study programs

General overview

ESTIA, located in Bidart (64210), is a renowned French engineering school specializing in industrial technologies and advanced manufacturing. The institution offers a strong STEM-oriented curriculum at three levels: Bachelor's, Master's, and Doctorate, with a focus on

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multidisciplinary engineering education combining mechanics, electronics, and computer science.

The school's pedagogy is built around applied learning, international partnerships, and industry collaborations, ensuring that graduates acquire both theoretical and practical expertise in cutting-edge technological fields.

STEM Programs Offered at ESTIA

Bachelor's Level (ISCED 6 level)

ESTIA bachelor's in engineering: A three-year program covering fundamental STEM subjects such as mathematics, physics, computer science, and industrial engineering. The program provides a solid foundation for students aiming to pursue a master's in engineering or enter the workforce with strong technical skills.

Master's Level (ISCED 7 level)

ESTIA Engineering Diploma (Equivalent to a master's degree): A three-year program following two years of preparatory classes (CPGE) or a related university degree. It focuses on mechatronics, industrial engineering, and digital transformation.

Double-Degree Programs: ESTIA offers several double-degree options with international partner universities, allowing students to specialize in advanced STEM fields while gaining global exposure.

Specialized Master's Programs: These include advanced courses in artificial intelligence, robotics, and industry 4.0, designed for professionals looking to enhance their expertise in emerging technologies.

Doctoral Level (ISCED 8 level)

PhD Programs in Collaboration with Research Institutes: ESTIA collaborates with institutions such as the University of Bordeaux and the Basque Country University to offer doctoral research opportunities in STEM fields like smart manufacturing, sustainable energy, and cyber-physical systems.

Female Enrollment in STEM Programs at ESTIA

While engineering studies have traditionally been male-dominated, ESTIA has made significant efforts to promote female participation in STEM. Recent statistics indicate an increasing percentage of female students, particularly in fields such as industrial engineering and data science. Initiatives such as mentorship programs, partnerships with organizations like "Femmes et Sciences," and scholarships for women in engineering have contributed to this positive trend.

Program Details

Duration: Bachelor's programs last 3 years, Engineering diplomas require 5 years (including preparatory studies), and PhD programs vary from 3 to 5 years.

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Entry Requirements: Admission to ESTIA's engineering program typically requires a preparatory class (CPGE), a scientific university diploma (DUT/BUT, Licence), or an equivalent international qualification.

Specializations: Students can focus on areas such as artificial intelligence, automation, sustainable manufacturing, and digital systems.

Conclusion

ESTIA is an engineering school in France, fostering innovation and inclusivity in STEM fields. Its commitment to multidisciplinary learning, industry collaboration, and female inclusion in STEM ensures that its graduates are well-prepared for the challenges of tomorrow's technological world.

Commitment to Gender Diversity in STEM

ESTIA recognizes the importance of increasing female participation in STEM fields and has implemented several initiatives to encourage and support women in engineering and technology. Through targeted programs, partnerships, and awareness campaigns, the institution strives to create an inclusive learning environment that fosters gender diversity.

Key Initiatives and Programs

- ***Booklet "Ingénieure au Féminin"***

ESTIA has developed the booklet "Ingénieure au Féminin" to inspire young girls to pursue careers in engineering. The booklet showcases female role models, shares testimonials from ESTIA alumnae, and provides information on the diverse career paths available to female engineers. It is distributed in high schools and during orientation events to encourage young girls to consider STEM studies.

- ***Active Involvement in the "Elles Bougent" Network***

As an active member of the "Elles Bougent" network, ESTIA connects female students with women engineers and technicians working in technology and industrial sectors. Through this network, students benefit from mentorship, company visits, and participation in events aimed at breaking stereotypes and encouraging girls to pursue technical careers.

- ***Hosting of "Innovatech 2025"***

ESTIA is proud to host "Innovatech 2025", a major event that promotes female innovation and entrepreneurship in STEM. This event brings together female high school students, engineering students, and industry professionals to collaborate on technological challenges. It serves as an inspiring platform for young women to showcase their creativity and technical skills.

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- ***"Filles et Sciences" Day***

The school organizes the "Filles et Sciences" day, an annual event designed to demystify STEM fields for young girls. Through workshops, hands-on activities, and discussions with female scientists and engineers, the event aims to spark curiosity and motivate girls to pursue scientific studies.

- ***Science Outreach Days in High Schools***

To reach a wider audience, ESTIA conducts Science Outreach Days in local high schools, where female students and faculty members present STEM-related projects and share their experiences. These interventions are designed to inspire high school girls and demonstrate the real-world impact of STEM careers.

Future Career Opportunities for Graduates

Female graduates of ESTIA have several paths and employment opportunities available for bridging the gap between technology and business: ESTIA students can be entrepreneurs and start their own business, they have the capability to design future products and services, to manage teams to ensure proper integration of the different technical elements into the final product, they can bring specific competencies in mechanics, electronics, achieve higher impact roles in leadership positions, and acquired critical knowledge and skills necessary in high-tech industries, public and private enterprises.

6.2.2. Readiness of Gender Equality Plans (GEP) (Project Activity WP2.3)

Contextual background

National Requirements

August 2018 – The law "n°2018-771, cornerstone of gender equality requirements at national level in France

The law "n°2018-771 Pour la liberté de choisir son avenir professionnel" (https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000037367660) voted by the French Parliament on the 1rst of August 2018, aims at creating a relevant legal framework for everyone to achieve their full potential in their professional lives, by removing the obstacles and discrimination that persist in the country, and offer the means to arouse emancipation for the citizens to freely choose their professional future, while benefiting from collective protection. This law is the cornerstone of gender equality requirements at national level.

December 2024, the Rixain Law, to accelerate economic and professional equality

The law of December 24, 2021, known as the Rixain Law, aim sat accelerating economic and professional equality in companies. Following this law, every year on March 1, companies with

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at least 50 employees must calculate and publish their gender equality index. ESTIA being a private non-profit higher education and research institution, we comply with this obligation.

The French Ministry of Higher Education and Research has prepared its GEP (https://www.enseignementsup-recherche.gouv.fr/sites/default/files/2025-03/plan-national-d-action-galit-professionnelle-2025-2027-36402.pdf.) specific to the ESR perimeter, with particular emphasis on promoting a culture of equality, women's health and training.

This year (2025) marks the renewal of the Action Plans for Professional Equality between Women and Men, for both the Ministry and the public higher education and research establishments, for the period 2025-2027.

Institutional Context

ESTIA changed its juridical status in 2016 into a EESC (Etablissement d'Enseignement Supérieur Consulaire). Together with this new status, came legal obligations and responsibilities, which were previously covered by the Chamber of Commerce of Bask Country.

The GEP is not mentioned in the strategic documents issued by ESTIA.

However ESTIA has obtained in 2024, the label "Développement durable et responsabilité sociétale» (DD&RS) Focus sur le Label DD&RS dans l'enseignement supérieur et la recherche | enseignementsup-recherche.gouv.fr, made for higher education & reserach insititutions in France. As part of this label, ESTIA in in the process of defining a blueprint with a specific focus on social matters. It will be published in 2025.

Current State of GEP at ESTIA

Public Availability and Transparency

ESTIA being a private organization, it has to comply with the Labor code related to companies of more than 50 employees (article R. 2242-2 du Code du travail). By the law, the employer initiates negotiations every year on remuneration, including actual wages, working hours and the sharing of added value within the company; and negotiations on professional equality between men and women, including measures to eliminate pay disparities, and quality of life and working conditions.

A GEP needs to be issued and submitted to the employee consultation body, and submitted to the DREETS (Directions régionales de l'économie, de l'emploi, du travail et des solidarités) .

The GEP is published on the ESTIA Intranet and it is validated by the CSE. However it is not made public, as these are internal matters. Moreover, there is no legal obligation to publish it.

The women/men index is published but not the GEP. The difference comes from the legal obligation: the index has to be published, but not the GEP.

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Scope and Coverage

ESTIA employees

ESTIA's GEP includes specific measures to ensure gender balance in leadership positions, both academic and administrative. It also includes measures regarding recruitment and career progression.

In ESTIA's GEP action plan, there was the obligation to integrate minimum 3 action domains. ESTIA has chosen 4: recruitment, professional training, salaries and working conditions.

Student recruitment

ESTIA promotes engineering jobs and careers through several activities: information sessions in schools (colleges and high schools), with particular emphasis on young women. Despite these efforts, only 8% of ESTIA's students are women.

Gender-based violence (GBV) policies

These aspects are not included in ESTIA's plan. However, there is an online document to alert about any violence for both students and staff. And there is a referent person for these matters.

Implementation and Governance

Organizational Structure for GEP Implementation

ESTIA has created a working group (WG) called the F/H Equality Observatory. However, it did not meet since 2023. There is also a referent for Sexual and Sexist Violences (SSV) for students and a referent for employees. A M/F equality referent whose missions focus on raising awareness among students and pupils (middle and high school). However, these structures need more formal integration into the university's decision-making structures to effectively drive gender equality reforms across all areas.

Monitoring and Accountability

As resource allocation is minimal, the leadership and follow-up on the structures for GEP implementation is not organized: the engagement depends on stakeholders' goodwill. As an example, the Filles & Sciences event involves the commitment of teachers, administrative staff and students. It takes 3 months to organize, with regular meetings and communications. ESTIA Direction is aware of it and accepts some women staff to dedicate time to the event, however the staff who dedicate time to Filles & Sciences, do it on a voluntary basis, with no specific support.

Best Practices in GEP Implementation

Flexible work policies and family-friendly initiatives: Policies that support work-life balance, such as flexible working hours or parental leave.

ESTIA's GEP includes:

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- Enable parents to accompany their children on back-to-school day, by offering them an hour's paid leave from work.
- Develop meeting methods that avoid travel: videoconferencing, etc.
- Develop teleworking on a regular or occasional basis, by drawing up a teleworking agreement and raising awareness of teleworking among employees and managers.

Gaps, Challenges, and Recommendations

Gaps in GEP Implementation

- **Leadership Representation and wage inequality:**

The Administration Council needs to have more women (about 30% today). The gaps in wages still need to be reduced.

- **Stakeholder engagement**:

There is a lack of leadership and follow-up regarding the structures that are supposed to be implementing the GEP. Several GEP-related structures and initiatives depend on the goodwill of a limited number of staff women volunteers.

The legal requirements help; however, it is more difficult to involve administrators and clients.

There is a stakeholder that could be more involved though: the employers. As they themselves need to comply to legal obligations in terms of gender diversity and equality of treatment between men and women, they are directly interested in ESTIA having more female students, as they will then feed their HR pipelines. SAFRAN HE is clearly asking for more engineer women.

- **Monitoring and Accountability:**

ESTIA should establish more structured, consistent monitoring systems to assess the success of the GEP.

ESTIA has made good progress in implementing its Gender Equality Plan (GEP), especially to comply with legal requirements. However, challenges persist in leadership representation and in the monitoring & accountability system. By addressing these gaps, ESTIA can further strengthen its GEP and contribute to gender equality in higher education.

6.2.3. Consultation Sessions (Project Activity WP2.4)

Key conclusions from the interviews with staff and students (qualitative)

The culture at ESTIA is perceived as caring, human-centered, and conducive to inclusion. This family-like atmosphere fosters a sense of safety, but it also tends to render gender inequalities invisible by creating the impression that “everything is fine.” For this culture to actively counteract inequalities, it must name them, address them explicitly, and equip the community to deal with them. Both faculty and students agree on the need for safe spaces to speak out,

awareness-raising initiatives, and institutional support to bring forward lived experiences and difficulties.

Certain actions are seen as relevant, such as the "Filles et Sciences" days, mentoring programs, outreach in high schools, and the promotion of inspiring female career paths. However, their impact could be strengthened through a more systemic approach: integration into the curricula, inclusion within pedagogical time, and visibility on official channels. The goal is to shift from isolated efforts led by a few committed individuals to a collective, institutional, and sustainable dynamic.

Regarding the tension between merit and equity, most participants reject the idea of quotas or admission bonuses for women, arguing that women do not need them given their qualifications. The real issue lies in addressing the pipeline, by combating self-censorship early on, making programs more understandable and relatable, and showing that engineering schools are not reserved for a stereotypically male profile. Cooperative pedagogical formats like those in the CPI (internal preparatory classes) program are perceived as better suited and more attractive to girls, being less competitive and more accessible.

The leadership is expected to act as a driving force: it must provide momentum, set a clear strategic framework, allocate resources, and embody the institution’s gender equality policy. Its role is to turn isolated initiatives into an institutional policy. Students, for their part, have a role to play as ambassadors of gender diversity, particularly in promotional actions and in their attitudes within student associations. Teachers must also become aware of their role as agents of socialization, able to adjust their stance, content, and examples to foster an egalitarian environment.

Finally, several indicators are mentioned to track progress: gender representation in student cohorts, associations, and leadership positions; climate indicators (qualitative data from surveys or focus groups); and trajectory indicators (graduate career paths, access to internships, jobs, etc.). These data should be cross-analyzed and made visible to inform action and refine internal policies.

Goals - what is the priority of actions to be implemented at the moment?

At present, the priority is to move from isolated initiatives to a coherent institutional strategy for gender equality. The first goal should be to structure existing efforts, such as awareness events and mentorship programs, within a visible and sustained framework supported by leadership.

A second priority is to target early stages of the pipeline, notably by strengthening outreach to girls in middle and high school through actions like “Filles et Sciences” or partnerships with local institutions.

Internally, a third key objective is to train and inform faculty and staff on gender biases and inclusive teaching practices. Creating safe spaces for dialogue and systematically collecting

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quantitative and qualitative indicators are also essential. Overall, the emphasis must shift from goodwill to strategic, collective action supported at all levels of the institution.

Cliffs - what problems and situations do women in STEM disciplines face, and what is challenging?

Women in STEM disciplines, as highlighted across the interviews, face a range of persistent “cliffs” — moments or zones of vulnerability that threaten their sense of belonging, progression, or legitimacy in the field. One of the most cited challenges is the lack of representation, both in numbers and in visibility: women often find themselves in minority positions within their classes, teams, or research groups, which reinforces feelings of isolation or exceptionality.

Another major difficulty lies in the pervasiveness of gendered expectations and stereotypes, often internalized by peers and even by educators, leading to unequal treatment or reduced credibility in technical discussions. Several testimonies refer to micro-aggression or inappropriate remarks, which, though not always ill-intentioned, accumulate and contribute to a climate of discomfort or exclusion.

Social norms also shape orientation choices, often deterring girls from envisioning themselves in engineering roles long before they arrive at higher education. Even once enrolled, women may be channeled toward perceived “feminine” domains or roles, such as communication, UX, or project coordination, limiting their technical exposure and growth.

Lastly, the lack of structural support—including limited access to mentoring, insufficient facilities (e.g., menstrual products, safe spaces), or under-resourced equality initiatives—makes it harder for women to fully thrive or challenge the status quo. These cliffs are often silent, but their cumulative effect is deeply destabilizing.

Needs - what is needed to deal with reefs - the most important conclusions

To effectively address the persistent "reefs"—the structural and cultural obstacles to gender equality—several key needs emerge from the analysis. First, there is a need for a clear institutional stance, with explicit leadership commitment and a strategic plan backed by resources and accountability mechanisms. Second, the institution must foster a culture of recognition and visibility, both for female role models in engineering and for initiatives that challenge gender stereotypes. There is also a strong need to intervene earlier in the educational trajectory, before university level, to counteract gendered self-censorship and socialization. Internally, the school must address implicit biases in pedagogical practices, student associations, and evaluation processes, through training and reflexive tools. Finally, there is a need for dedicated spaces and mechanisms for listening, such as support systems, anonymous reporting, and gender-sensitive services, to ensure that all students feel seen, heard, and supported.

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Key conclusions from the survey with staff and students (quantitative)

The results of this survey reveal a nuanced perception of gender equality and the academic climate within the institution. When asked whether women have equal opportunities for development, responses were mixed, with a majority falling between moderate agreement and disagreement. This indicates a widespread but persistent awareness of gender-based disparities. While most respondents reported feeling comfortable expressing their ideas in class or group settings, about a quarter admitted not always feeling free to do so, often due to gender dynamics - highlighting the presence of implicit barriers to participation.

Notably, 27% of respondents acknowledged hesitating to speak up because of their gender, a concerning figure that calls into question the inclusiveness of classroom environments. The sense of belonging in one's field of study is generally strong (73% responded “strongly yes”), though it coexists with feelings of doubt and occasional questioning, especially among younger students. However, very few respondents reported seriously considering changing fields due to the academic climate, suggesting either a certain resilience or an overall positive perception of their learning environment.

A key issue that stands out is the widespread lack of awareness regarding anti-discrimination support services—more than half of the respondents stated they were not aware of any such measures. Finally, the interest in support programs for women in STEM (e.g., mentoring, workshops, networking) is clear: over half of the respondents expressed willingness to participate, signaling a strong need and desire for the development of structured initiatives. Overall, this survey confirms the importance of making existing efforts more visible, expanding gender-related training, and more broadly engaging the academic community in building a more equitable environment.

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APPENDICES

TABLE 10. PERCENTAGE OF WOMEN IN GRADUATION OVER THE PAST 5 YEARS

ISCED 7 level Master's Level	2020		2021		2022		2023		2024	
	Total	% women	Total	% women	Total	% women	Total	% women	Total	% women
Number of admission students	1867	20,5	2181	24,2	3797	26	3770	29,7	3400	29,2
Graduations in the first year	296	16,9	293	18,1	315	17,4	234	16,7	268	14,5
Number of dropouts	15	0	17	0	17	0	10	0,2	N.A.	N.A.
Number of international mobilities	11	18,18	9	44,44	32	25	44	25	45	17,78
Number of graduates	247	17	247	16,5	272	17,64	267	18,35	254	16,5

TABLE 11. TO BE ADDED

ISCED 8 level (Doctoral Level)	2020		2021		2022		2023		2024	
	Total	% women	Total	% women	Total	% women	Total	% women	Total	% women
Number of admission students	N.A.		N.A.		N.A.		N.A.		N.A.	
Graduations in the first year	12	41,67	7	42,86	5	60	5	60	6	16,7
Number of dropouts	0	0	0	0	2	50	0	0	3	0
Number of international mobilities	1	100	N.A.		1	0	N.A.		N.A.	
Number of graduates	3	33	7	42,86	4	5O	5	60	2	40

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TABLE 12. BEST PRACTICE MATRIX

Best practice Area	ESTIA
Mentorship Programs for Underrepresented Genders	No program
Gender-Sensitive Recruitment and Promotion Policies	Recruitment practices reviewed and formal gender policy
Awareness and Training Programs on Diversity and Inclusion	Occasional diversity training, but not mandatory
Flexible Work Policies and Family-Friendly Initiatives	Flexible work policies (teleworking), parental leave (by law, for both parents, gender sensitive), no childcare support
Gender-Based Violence (GBV) Prevention Policies	Anti-violence policies, awareness campaigns

TABLE 13. GAP ANALYSIS AND RECOMMENDATIONS MATRIX

GEP Area	Coverage at USN	Identified Gaps
Leadership Representation	Weak	Make a benchmark within ST3AM consortium to see how we could improve this aspect
Accountability Structures	Weak	On top of the time allocated to HR to lead the GEP, it would be beneficial to have additional operational resources dedicating part of their time to the implementation and follow-up of the GEP (and of course a budget for that). Make a benchmark within ST3AM consortium to see how we could improve this aspect
Monitoring Mechanisms and KPIs	Weak	This last point could be linked to the previous one. With additional resources, there could be time dedicated to improving the KPIs and the monitoring mechanisms.

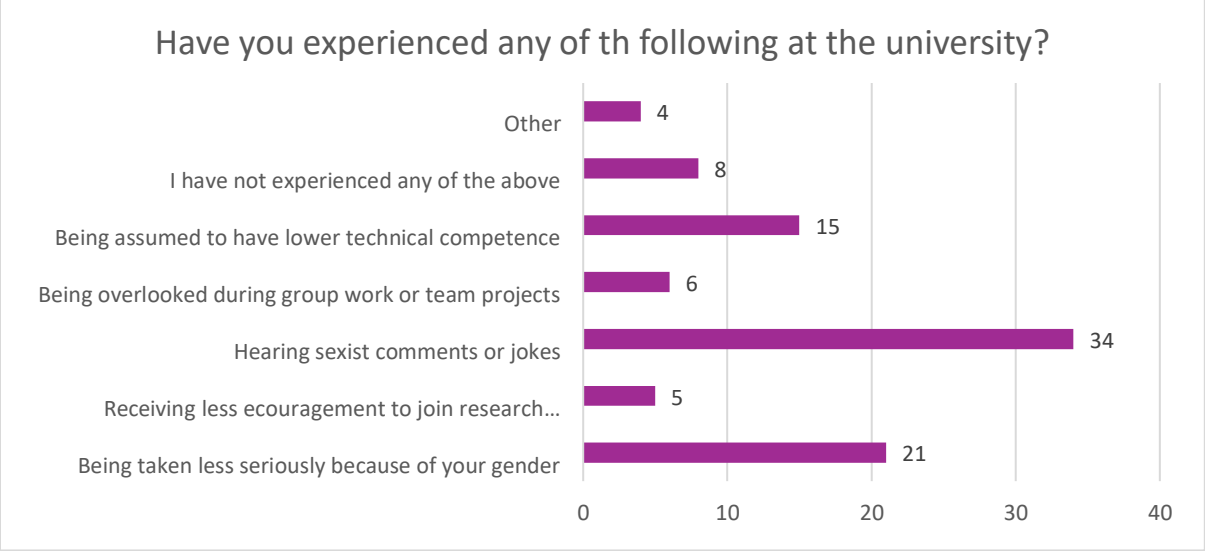

FIGURE 13. ESTIA - WORKING/LEARNING EXPERIENCE AS A WOMAN

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6.3. Greece: University of West Attica (UNIWA)

6.3.1. Statistical Datasheets (Project Activity WP2.2)

General organization of the educational system in Greece

The Greek educational system is organized into several stages, starting with optional Kindergarten (ages 4–6), followed by compulsory Primary Education (ages 6–12). Secondary Education is divided into two stages: compulsory Gymnasium (ages 12–15) and afterwards, optional Lyceum (ages 15–18). Higher education is provided by universities and Technological Educational Institutes (TEIs), with universities focusing on academic studies and TEIs emphasizing practical and vocational training.

Study Regulations at National Level Referring to STEM Approach in Greece

Greece places strong emphasis on STEM education across all levels of schooling. The national curriculum, developed by the Ministry of Education and Religious Affairs, focuses on mathematics, physics, chemistry, and technology. Greece also participates in European Union programs such as Erasmus+ and Horizon 2020, that provide funding and support to Greece for developing STEM education through research and innovation projects. In recent years, there has been an emphasis on digital transformation within education, with efforts to introduce coding, robotics, and other technology-based subjects into the school curriculum. This reflects Greece's aim to enhance the overall teaching and learning experience for students, preparing them for the demands of the future workforce.

General Situation of Female Inclusion in STEM-related Studies in Greece

Despite progress in gender equality, women remain underrepresented in STEM fields in Greece, particularly in engineering, computer science, and mathematics. While more women pursue studies in biology and life sciences, the gender gap widens at higher education levels. Women tend to be more present in disciplines such as biology and life sciences. However, cultural and societal barriers continue to limit women's access to certain professions. These stereotypes, combined with the expectation that women prioritize family responsibilities, contribute to the underrepresentation of females in engineering and technical professions. According to Eurostat, women in Greece make up approximately 38% of the workforce in science and technology, although their representation is higher in life sciences and lower in engineering and information technology (Eurostat, 2020). To address this, Greece has launched initiatives such as **"Girls in STEM"** to challenge stereotypes and encourage young women to pursue science and technology careers. Initiatives like Women in Technology Greece (WiT) aim to support and inspire women pursuing careers in technology and innovation, offering a platform for networking and professional development. The Greek Ministry of Education has worked in collaboration with the EU to ensure that gender stereotypes are minimized within the national curriculum and

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educational environment. These programs aim to inspire girls from an early age by providing mentorship and showcasing female role models in STEM professions.

Overview of nationally offered STEM-related study programs in UNIWA

The university provides a wide range of Engineering studies on the levels integrated MSc, MSc and PHD. There is no stand-alone BSc degree in those majors. The university also has the department of Food Science and Technology and the Department of Wine that also fall under the STEM fields. The only department that has recorded the women to men students is the department of Mechanical Engineering at 11%.

The percentage of female enrollment and graduates in UNIWA departments is not provided. However, based on the Hellenic Statistical Authority, we observed the following:

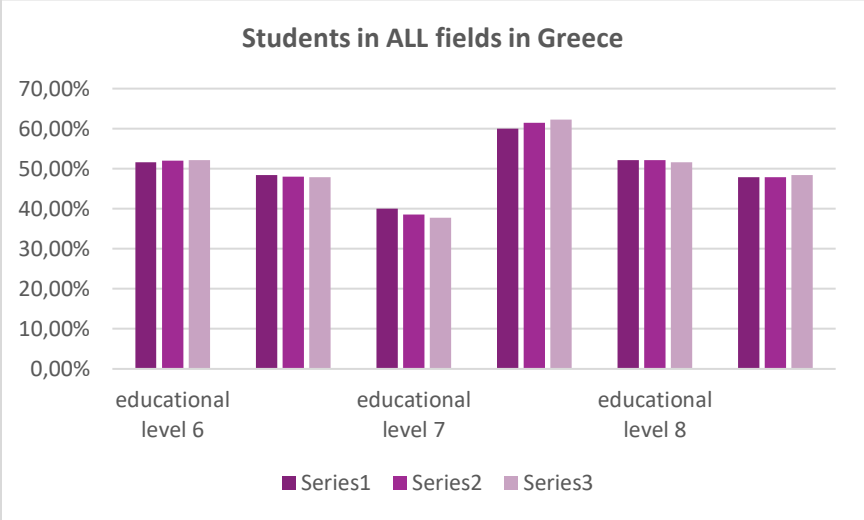

FIGURE 14. UNIWA - SHARE OF MALE AND FEMALE STUDENTS IN EACH LEVEL OF EDUCATION

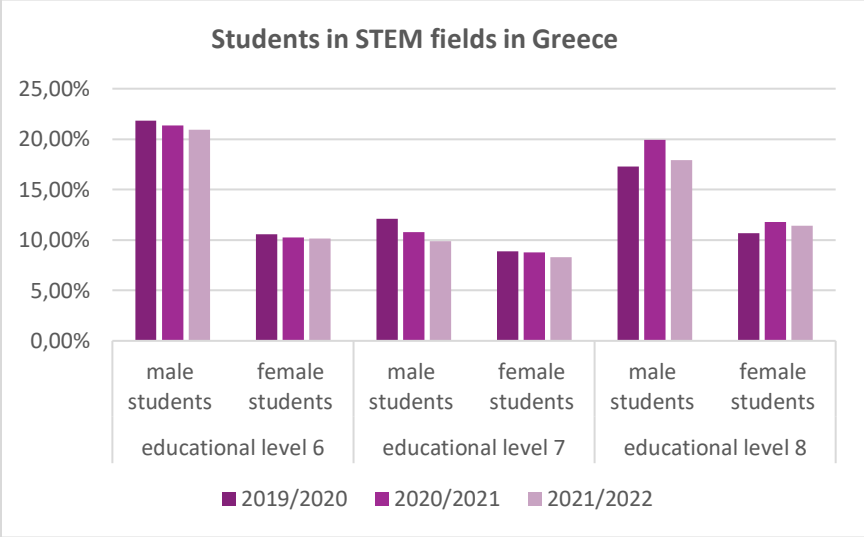

FIGURE 15. UNIWA - SHARE OF MALE AND FEMALE STUDENTS IN STEM FIELDS

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We can clearly observe that women's participation in STEM fields is significantly lower than that of men. However, this disparity tends to even out when considering all fields of study, likely because certain fields are female-dominated, balancing the overall picture. Gender discrimination remains deeply rooted in the social norms of Greek culture, as we will discuss later on.

TABLE 14. *SHARE OF FEMALE ADMISSIONS IN ENGINEERING FILEDS, IN 2022 AT UNIWA*

Fields of study				ISCED level of education				
Broad field		Narrow field		5	6	7	8	Total
07	Engineering, manufacturing and construction	071	Engineering and engineering trades	-	28.09%	41.78%	33.51%	28.88%
		072	Manufacturing and processing					
		073	Architecture and construction					
	Total: all UNIWA fields of education (Percentage of Female students)			-	45.09%	63.10%	51.67%	46.61%

There is no data available for each narrow field 071,072,073.

There are no registered dropouts from the Universities in Greece until now. A registered student is not obligated to be active in academic studies. Therefore, if someone decides to stop their academic journey, they don't have to declare dropping out.

Initiatives undertaken by the University to promote female participation in STEM fields

- In 2021 the Gender Equality Committee (EIF) was established at the University of West Attica with a three-year term, as an advisory body to administrations of Schools and Departments for the promotion of gender equality.
- In 2021 and in 2023 the University's platform hosted a show called "FIRST FROM THE WEST" that had a couple of episodes devoted in empowering women on their academic journey and invited successful women who work at the University.
- The department of Electrical Engineering has taken the initiative to invite more female students to their MSc program and offer free access to relevant statistics.

Future Career Opportunities for Graduates

The three main career paths for graduates are continuing the academic journey, joining the workforce as an employee or being self-employed:

- There are some programs that encourage women in research. Such as the action #Her Research by the Greek organization of Women Entrepreneurs (SEGE), Provide examples of successful female alumni being the graduates of STEM programs.

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- For self-employment the Public Employment Service (DYPA) offers financial support with emphasis on women meaning that 60% of the beneficiaries are women.
- As far as employees are concerned there are organizations and Unions that encourage women and stand up for Women rights, such as Women on top organization and the NGO Women Do Business.

6.3.2. Readiness of Gender Equality Plans (GEP) (Project Activity WP2.3)

Legal mandates and policy landscape

Gender Equality Plans (GEPs) in Greek higher education are shaped by both national and EU policies. Greece has enacted key laws—such as Law 3896/2010 and Law 4604/2019—to integrate gender equality into institutions, while Law 4589/2019 requires all universities to form Gender Equality Committees (GECs). The EU requirement, which mandates GEPs for funding eligibility has encouraged Greek universities to institutionalize gender equality. Universities must also include gender-related objectives in strategic plans submitted to the Ministry of Education, and gender integration is prioritized in national and EU research funding calls. Future actions include strengthening GECs and improving complaint-handling mechanisms within higher education institutions.

Institutional strategy and vision

The University of West Attica (UNIWA) has outlined its 2024–2027 strategic goals, which include enhancing the Gender Equality Committee's role, improving student support services to foster inclusivity, and developing a sexual harassment manual. However, the Gender Equality Plan (GEP) is not fully aligned with these goals, as it lacks reference to the manual and remains vague in structure and prioritization. While the intention to advance gender equality is evident, the absence of detailed actions and measurable objectives limits its effectiveness.

Historical and cultural factors

UNIWA was founded in 2018 through the merger of three technological institutes that previously lacked gender equality initiatives. Efforts toward gender equality began in 2019 with seminars, but broader institutional engagement remains limited. Research conducted in 2022 at Aristotle University of Thessaloniki revealed alarming rates of gender-based violence—affecting up to 89% of female respondents—with minimal reporting and institutional support. Such findings highlight the normalization of gender-based violence within university settings and underscore the urgent need for stronger institutional commitment to gender equality and prevention measures.

The existence and current level of comprehensiveness of GEP

The Gender Equality Committee was established in 2021 with the initiative of creating an inclusive environment in the University.

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Public availability and transparency. According to the GEP (2024 -2027) of the Gender Equality Committee of UNIWA, the GEP is available to the public from the website of the Gender Equality Committee of UNIWA. However, the GEP is only in Greek, the yearly reports are not available or updated on the website and the "announcements" section of the website is a bit outdated.

Leadership representation. The GEP includes the creation of a "gender map" that shows gender inclusion in administrative and academic leadership positions across the University. The goal of the "gender map" is to promote gender equality.

Recruitment and career progression. The GEP has created two actions for the inclusion of Gender in funding, research, and teaching.

- Integrating gender issues into the University-funded research activities, by encouraging women to apply and ensure that there is equal representation.
- Providing expertise in master thesis and PHD thesis regarding gender issues. Also, encouraging the incorporation of gender issues in the thesis by establishing an award (with a cash prize).

An action plan on providing remote work, extra paid leave days, and an in-uni children's creative activity center is also included. The goal of this action is to enable the participation of parents and caregivers to continue their education.

Gender-based violence (GBV) policies. According to the GEP, the action plans to combat gender-based violence include promoting counseling organizations and providing mediation services in cases of complaints of discriminatory treatment or harassing behavior. The latter refers to assisting victims of discrimination when they report discriminatory treatment in collaboration with the academic units, the Student Ombudsman, and the Legal Service of the institution.

Implementation and governance: organizational structure for GEP implementation

There are no yearly reports available to track the implementation of the GEP. However, according to GEP, we expect the information below to be valid.

- ***Committees, task forces, or offices:*** It is not stated clearly who oversees the GEP implementation.

- ***Resource allocation*****:** The budget and the resource allocation are not public.

- ***Stakeholder engagement:*** The Gender equality Committee consists of 9 members in total from different positions within the University. The committee consists exclusively of women.

- ***Monitoring and accountability:*** The implementation of the GEP is monitored by quality and quantity indicators through questionnaires, the publication of yearly reports, and the creation of the "gender map". However, the questionnaires are not public, the reports are not published, and the gender map is "in the making" according to the website. So overall, the structures have not been proven effective.

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Best practices

- ***Mentorship programs****:* Using inclusive language in all files and "announcements" of the University (AUT), having extra gender-neutral toilets (AUT), and creating a gender-sensitive mentorship program to empower everyone to engage in funded research (AUT).
- ***Awareness and Training programs****:* In 2021 and 2023 the UNIWA's platform hosted a show called "FIRST FROM THE WEST" that had a couple of episodes devoted to empowering women on their academic journey and invited successful women who work at the University., Seminars on inclusivity for students and faculty, one per year for each group (AUT), supportive LGBTQ+ network in campus (AUT).
- ***Flexible work policies and family-friendly initiatives****:* Creating a space where mothers can breast-feed or get milk for children in the University (AUT).

Gaps, challenges, and recommendations

As was stated above, the Gender Equality Committee of UNIWA does not seem noticeably active.

- ***Unaddressed areas:*** The reasons, if any, of the remaining gender inequities are not recognized and addressed. There are no specific activities for encouragement of gender diverse environment proposed. There are no policies for the prevention of Gender Violence.
- ***Resource allocation:*** The GEP should include action encouraging the connection with the industry and hiring agencies.
- ***Inclusion:*** The Gender Equality committee should be gender diverse to have a greater impact and a more universal approach
- ***Improving monitoring and reporting mechanisms:*** The committee should have social media accounts to increase engagement and publish the yearly reports/findings/ motivational content. External evaluation of the GEP implementation process is critical and the university should take action by monitoring this process.

TABLE 15. UNIWA - MAIN CONCLUSIONS ABOUT READINESS OF THE GENDER EQUALITY PLAN

Accountability	Monitoring Mechanisms	Performance Indicators	Frequency of Reports	Accountability Structures	Gaps
UNIWA	Occasional reviews	No	Annually	Week	Need to publish the reports, Need for external evaluation

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TABLE 16. UNIWA – BEST PRACTICES

Best Practice Area	Mentorship Programs for Underrepresented Genders	Gender-Sensitive Recruitment and Promotion Policies	Awareness and Training Programs on Diversity and Inclusion	Flexible Work Policies and Family-Friendly Initiatives
UNIWA	No formal program, only the creation of a gender map is mentioned	Not a detailed approach, only the goal to encourage equal recruitment is mentioned	Limited interviews and a couple of seminars on the matter during the last 4 years	Comprehensive flexible work policies, parental leave, and childcare support

6.3.3. Consultation Sessions (Project Activity WP2.4)

Discussions of perceptions on gender equality inside HEIs in STEM

Key conclusions:

- The Gender Equality Committee, established in 2021, appears inactive and unresponsive to emails. Most of the students were unaware of the Committee's existence or any Gender Equality related initiatives. Some professors noted that the committee was created more as a formality to fulfill institutional obligations rather than as a genuine initiative.
- The only available tools to support students and ensure their safety are end-of-semester evaluation forms and academic advisors. Throughout the conversation, it was repeatedly pointed out that the University lacks an active body that manages gender discrimination problems.
- Women in STEM disciplines faced discriminating comments from fellow students:
  - "You are smart for a girl".
  - "If you work as an engineer on ships, how are you going to become a mother?"

And from professors toward students:

  - "Women pass their exams because they show off their bust".
  - After some examples about cars and car-mechanisms, "Did you, girls, get that?"
  - Every time a woman raised her hand the 2 professors would get excited, and they would say "a girl raised here hand, let's see what she has to say", even though it was well-intentioned it created an awkward environment in the classroom.
  - When a woman had a technical question, a professor commented arrogantly: "In which magazine did you read that?" diminishing the person and question.

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- Discriminating acts that professors have noticed or experienced are not limited, they talked about difficulties in finding a job as a woman because companies will often ask during interviews about their plans on getting pregnant or on raising kids. We discussed upon feeling seen as the female engineer, rather than simply an engineer and facing comments like: “You have good thinking for a woman”.

What is needed to be done – solutions that were proposed and conclusion.

- Information actions on statistics and experiences of discrimination with a dual goal: raising awareness and creating a team and a sense of belonging.
- Creating a list of complaints to monitor the behaviors that promote gender segregation systematically.
- Use of a more inclusive language and examples.
- Encouraging all students to ask questions during the lesson. This can be done by commenting positively on a question with phrases such as: “such a good question” or “your question helps me to see what I haven’t explained thoroughly”, or “your question gives me an opportunity to talk about ...”.
- There is urgent need for an active University body that manages gender discrimination problems.
- Communication seminars that teach professors and students how to communicate in a more equal and efficient way. These sessions should also offer guidance on how professors can provide feedback or make remarks without sounding offensive.
- Behavioral seminars focused on promoting equality, managing conflicts, and setting an example for the students to follow.

We conducted an additional questionnaire in which 10 students (women) participated revealing some striking findings:

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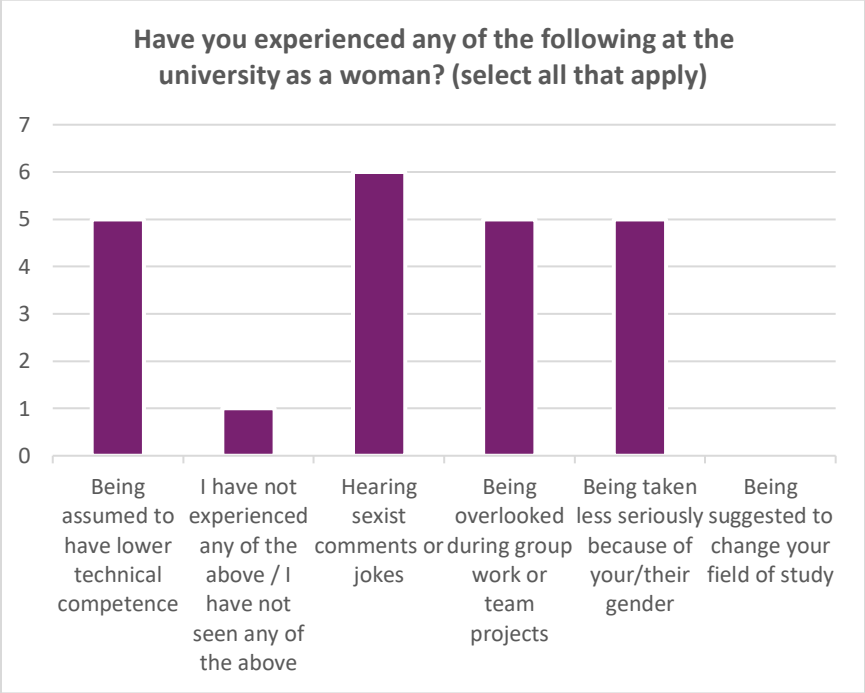

FIGURE 16. UNIWA - EXPERIENCED DISCRIMINATION AT UNIVERSITY

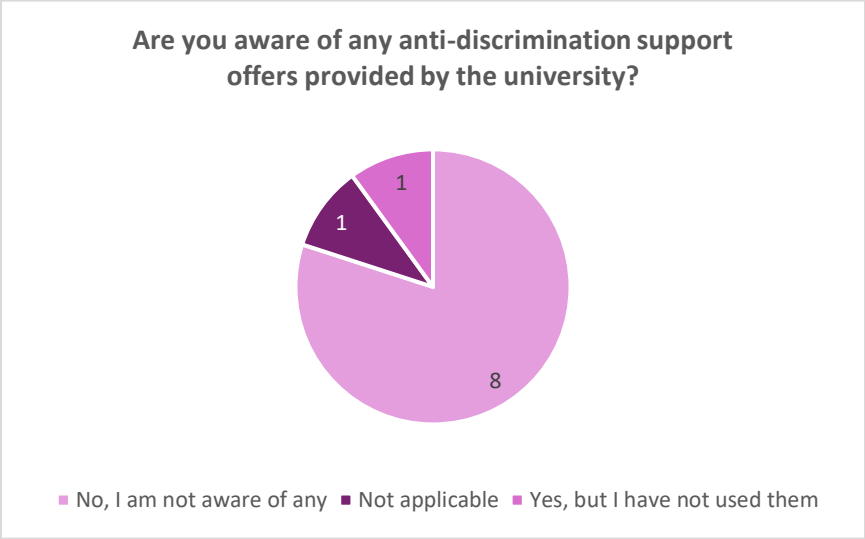

FIGURE 17. UNIWA – AWARENESS ABOUT ANTI-DISCRIMINATION SUPPORT PROVIDED BY THE UNIVERSITY

The discriminating acts are vivid while most students are not aware of any anti-discrimination support systems provided by the university.

A similar questionnaire was completed by 10 professors (of mixed genders) where the perceived impact of discrimination appeared to be considerably lower, as shown below:

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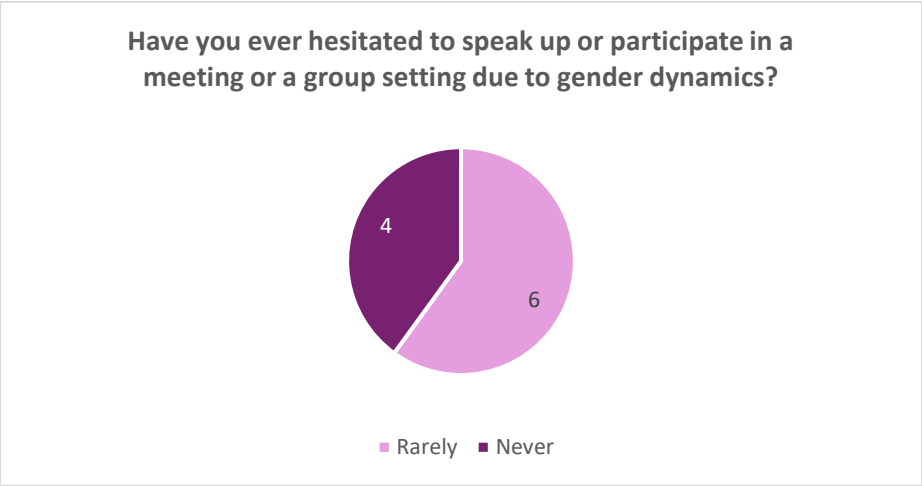

FIGURE 18. UNIWA - EXPERIENCE ABOUT SPEAKING UP IN CLASS AS A WOMAN

FIGURE 19. UNIWA – FEELING WELCOMED AT THE WORKPLACE

Conclusions

The results of this report reveal a mixed but clear picture: while formal structures for gender equality exist at Greek universities such as UNIWA, including the establishment of the Gender Equality Committee and a GEP, implementation remains limited, under-communicated, and insufficiently visible to students and staff. The lack of awareness of support mechanisms, absence of systematic monitoring, and persistence of discriminatory behaviors demonstrate a significant gap between policy and lived reality. The consultation findings underline an urgent need for active intervention, stronger accountability, and safe, accessible channels for reporting and support.

Greece has made strides in recognizing the importance of gender equality in education, and the national momentum exists. However, Greek HEIs must now transition from compliance-driven measures to proactive cultural transformation. Building a more inclusive STEM environment calls for sustained training, transparent communication, active student engagement, and a re-imagining of STEM learning environments through creativity, diverse representation, and

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student-centered practices. Embracing the ST3AM philosophy can serve as a catalyst for this change, making STEM more attractive, relatable, and empowering for women.

The insights of this report are not an endpoint; they are a call to action. The next steps require Greek HEIs to prioritize the implementation of its GEP, activate support structures, and cultivate a culture where gender equality is visible, embedded, and championed by leadership as well as the academic community. By committing to concrete actions and inclusive practices, Greece can set a strong example and contribute meaningfully to a European movement that ensures all students can thrive, innovate, and belong in STEM.

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6.4. Lithuania: Vytautas Magnus University (VMU)

6.4.1. Statistical Datasheets (Project Activity WP2.2)

General organization of the educational system in Lithuania

The Eurostat report on women in science and engineering in 2021 emphasizes the lower percentages of women compared to men in different STEM professions. Although Lithuania holds the highest proportion of female scientists and engineers among all EU countries, the Research Council of Lithuania indicates that there is still a need to improve career progression and to address the gender pay gap suggesting further initiatives and practices towards women empowerment in STEM, in all educational contexts (European Institute for Gender Equality, 2021). The 2021–2030 EDUCATION DEVELOPMENT PROGRAMME, prepared by the Ministry of Education, Science and Sports of the Republic of Lithuania, identifies as one of the problems the fact that there are not enough people studying STEM subjects in higher education. The goal is to increase the share of people studying in STEM fields compared to all students (from 28.3% in 2017–2018 to 33% in 2030 (30% – 2025).

The following reasons for the issue to be solved are identified:

- Low interest of students in mathematics and natural sciences at school.
- Higher education institutions are not interested in promoting STEM study programs among applicants, admitting students to other popular study programs, even though they are paid ones.
- Applicants are not encouraged to choose STEAM study programs.
- Employer representatives are not sufficiently active in contributing to the development and promotion of STEM study programs. *Vytautas Magnus University Gender Equality Plan for 2021-2025* identifies that it is necessary "to strengthen the representation of women and men by shaping new role models in areas where the number and representation of women and men is low (e.g., STEM fields, social sciences, humanities, arts)."

Overview of nationally offered STEM-related study programmes in Vytautas Magnus University

Vytautas Magnus University has 10-bachelor level, 15 master level and 8 PhD level STEM-related study programs counting all together 629 students at bachelor level, 365 students at master's and 31 student at PhD level studies. The four master level study programs are part-time; other programs have full-time studies. Languages of instruction are Lithuanian and English. VMU has about 20% of international students STEM-related study programs. The programs cover study areas of life sciences, IT, mechanical and civil engineering, biotechnology. The length of bachelor studies is 4 years; master studies continue for 2 years and PhD studies – for 4 years.

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Admission of students who graduated general education schools in the Republic of Lithuania to the first cycle (bachelor's) studies is carried out centrally on a national scale. The Ministry of Education, Science and Sports of the Republic of Lithuania confirms the number of state-funded places for various study fields, which in 2024 referred to 11 456 places *(Lietuvos Respublikos Vyriausybės 2024 m. kovo 27 d. nutarimas Nr. 211*). About one-third of those places are allocated to STEM-related study programs. The Lithuanian Association of Higher Education Institutions for the Organization of General Admission (LAMA BPO) organizes students' admission to Lithuanian universities at bachelor level (*Bendrojo priėmimo į Lietuvos aukštųjų mokyklų pirmosios pakopos studijas 2025 m. tvarkos aprašas*). Applicants must have passed the state exams in mathematics and Lithuanian language, as well as one optional exam which depends on the field of study. In order to study in life sciences study programs, it is necessary to have passed the biology exam (except for biochemistry where a chemistry exam is required). For IT studies one of the following exams - IT, physics, chemistry, biology or geography - is compulsory. The same is for Engineering and Biotechnology study fields (*2025 m. stojančiųjų konkursinių mokomųjų dalykų sąrašas*). An applicant can indicate up to six different study programs at several universities in his/her application. An applicant is admitted to the relevant university and study field depending on his/her place in the general admission queue. International applicants are applying through International Relation Departments of different universities. The admission requirements for international applicants are like the requirements for Lithuanian applicants except the Lithuanian language exam, however the approval of English B2 level is compulsory. Citizens of non-EU countries can only apply for the self-financed study places.

The Ministry of Education, Science and Sports of the Republic of Lithuania also determines state funded places for master and PhD study programs. At 2024 admission for master studies there were 3 886 state funded places and for PhD studies – 532 state funded places at all Lithuanian higher education institutions *(Lietuvos Respublikos Vyriausybės 2024 m. kovo 27 d. nutarimas Nr. 211*). One third of these places were set for STEM-related study programs. The Ministry distributes places for master's and doctoral studies to universities depending on their scientific/artistic achievements in the relevant field of study. Each university organizes admission to master's studies separately, taking into account the requirements stipulated in the descriptions of study fields approved by the Minister of Education, Science and Sports of the Republic of Lithuania (*Studijų krypčių aprašai*). Universities have also approved the rules for admission of students to master's studies indicating which bachelor's study fields graduates can enroll in the relevant master's study program, the structure of the competitive score, and other important information (*VDU priėmimo į magistrantūros studijas tvarka 2025*). VMU has indicated in its admission procedure that the structure of the competitive score for admission to master's studies consists of the weighted average of the grades of all subjects in the bachelor's diploma supplement, the grade of the bachelor's final thesis, and the weighted average of the grades of the subjects of the study field. Applicants who have not enrolled in state-funded study places have an opportunity to study in self-financed places.

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Several research and study institutions usually organize PhD studies. One of the main requirements for admission to doctoral studies refers to a number of applicant's scientific publications and presentations at scientific conferences.

Life sciences study programs are the most popular among female students. 75% students of BSc Biology and Genetics study program are girls; the similar situation is for master level study programs like MSc Molecular Biology and Biotechnology, MSc Biochemical analysis and for PhD studies (Biology, Biochemistry, Biophysics, Ecology and Environmental Science). 50% of female students are in study programs from technology and physical sciences study fields at the bachelor level (BTech Biotechnology, BSc Environmental Science and Environmental Protection), but in master's studies the situation changes in favor of girls and here we have from 60% (MSc Environmental Management, MTech Industrial Ecology) to 80% of female students (MTech Applied Biotechnology, MTech Biotechnology and Pharmaceutical analysis). The situation is different in IT and Engineering study fields, however it depends on a study program. For example, at BSc Information systems and MSc Applied Informatics study programs there are 20% female students and 80% male students. Here a big impact on female/male student ratio is provided by the international students. The 50% of students in these study programs are international students and 90% of them are males. The similar study program - BSc Multimedia Technologies - where only Lithuanian students are studying, covers 40% of female students. Also, we have 45% of female students at PhD Informatics studies. Engineering studies have the biggest variety in female/male student ratio. There are BEng Mechanical Engineering study program with only 1 female student and MEng Mechanical Engineering with no female students. In other study programs like MEng Agriculture Engineering and Management, MEng Hydraulic Engineering, PhD Environmental Engineering female students make up to 30% of the student body. The highest number of female students in engineering studies are in MEng Land Use Planning (40%) and at the BEng Land Use Planning and Real Estate Validation, MEng Sustainable Energy (50% in both) study programs.

Future Career Opportunities for Graduates

The Roadmap for the Life Sciences Sector of the Republic of Lithuania states that the strategic goal of the sector is to increase the share of life sciences sectors in the total value added of the sector to 5% by 2030 (*Lietuvos gyvybės mokslų sektoriaus kelrodis*, Vilnius, 2023). This sector includes companies engaged in biotechnology, pharmaceuticals, medical technology, genetics and genetic engineering, industrial biotechnology, and the chemical industry. Another rapidly growing industry in Lithuania is information and communication technologies (ICT). The roadmap for this area identifies technologies with a high impact on the EU such as microelectronics, nano electronics and photonics, artificial intelligence, and space technologies (*IRT sektoriaus kelrodis*, VšĮ Inovacijų agentūra, 2023). One of the defined development goals for the ICT area is to explore how to increase the share of added value created by this sector to 5.1% (of the country's total GDP) by 2030. This goal as well as others that can be associated with the promotion of the innovation ecosystem are provided in the National Progress Plan of the Republic of Lithuania

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(*Lietuvos Respublikos Vyriausybės 2021 m. spalio 10 d. nutarimas Nr. 998, dėl 2021–2030 metų nacionalinio pažangos plano patvirtinimo*, 2021). Both sectors are considered leading ones in the country, so the employment opportunities for women in biotechnology or ICT companies are quite good.

6.4.2. Readiness of Gender Equality Plans (GEP) (Project Activity WP2.3)

Contextual background

National requirements

Legal mandates

Equality of women and men is one of the fundamental values of the European Union (*The European Union and Gender Equality*). The European Union research community aims at tackling the challenges of gender equality by introducing certain conditions and measures for funding the highest quality research programs. Attempting to improve gender equality in research EU has prepared a new regulation – starting from 2022, all universities participating in H2020 program are required to have Gender Equality Plan as their institutional measure (*the Gender Equality Strategy 2020-2025*). Article 5 of *the Law Amending the Law on Equal Opportunities for Women and Men of the Republic of Lithuania* states that "Educational and research institutions must implement equal rights for women and men"; Article 6 states that "the employer or the employer's representative is obliged to implement equal rights for women and men at the workplace". Article 26 *of the Labor Code of the Republic of Lithuania* declares that "an employer is obliged to implement the principles of gender equality and non-discrimination on other grounds" and that "an employer who has an average number of employees of more than 50 must adopt and publish, in the ways that are accustomed at the workplace, the measures for implementation of the principles for the supervision of the implementation and enforcement of the equal opportunities policies".

Policy landscape

The Gender Equality Plan is an institutional policy instrument aimed at ensuring gender balance by implementing cultural, systemic institutional and structural changes within the organisation. *Recommendations of the Ministry of Education, Science and Sports of the Republic of Lithuania on equal opportunities for men and women in Lithuanian institutions of education and research* declares the establishment of guidelines to promote equality between women and men and to eliminate inequalities in studies and research. The recommendations also seek to propose measures for the systematic integration of the gender perspective in all the institutions' policies and activities, to improve the gender balance in various fields of science and to increase the number of women in senior scientific and administrative positions. In 2020, the **Lithuanian University Rectors' Conference** prepared *the Guidelines for the prevention and prosecution of sexual harassment* in which sexual harassment is treated as a violation of academic ethics. The

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document presents the particularities of sexual harassment, prevention measures, the procedures of violation investigation and decision-making process in the academic community.

Institutional context

Institutional strategy and vision

From 2021, Lithuanian universities have started preparing gender equality plans (GEP). Here we will observe GEP of the five biggest universities in Lithuania: Vilnius university (VU), Vytautas Magnus University (VMU), Vilnius Tech University (VTech), Kaunas University of Technology (KTU), Lithuanian Health Sciences University (LHSU). GEP‘s are designed as an institutional policy instrument to ensure gender balance by implementing cultural, systemic, institutional, and structural changes within universities. For example, The *VMU Strategic Plan for 2021-2027* includes measures to ensure equal opportunities and gender equality. The first clause of the Strategic Action Plan aims to promote community sustainability and synergy by respecting the community's diversity and the personal autonomy of its members. One of the objectives is to ensure human rights, dignity, non-discrimination, equal opportunities, and diversity on gender, age, race, religion, language, culture, disability, and socioeconomic grounds. In summary, Vytautas Magnus University integrates its GEP with its long-term goals by aligning the plan's objectives and measures with the university's strategic documents and mission. The university aims to create an inclusive and equitable environment for all community members, with a focus on diversity, inclusivity, and gender equality. Similar principles are included in strategic plans of other universities.

Historical and cultural factors

The GEP of Vytautas Magnus University has been prepared and implemented in synergy and complementarity through key university documents and institutional policies that emphasize the need to ensure equal opportunities for all members of the community, regardless of gender, age, sexual orientation and gender identity, cultural identity, socio-economic background. *VMU Statute* underlines the need to ensure “equal access to competitions for teaching and research positions as well as to competitions for admission to studies, regardless of candidate’s gender, race, political or religious beliefs, nationality or citizenship.” *The VMU Code of Academic Ethics* seeks to promote equal rights and opportunities and to endorse values of respect, anti discrimination and ethical conduct. *The VMU Code of academic ethics* condemns discrimination, insults to honor and dignity on the grounds of age, gender or sexual orientation, disability, appearance, race or ethnicity, religion or beliefs.

As a member of the *ARQUS European University Alliance*, VU is implementing the action line “Widening Access, Inclusion and Diversity”. The main objectives of this action line are to increase inclusion (widening access and diversity) at the University, to improve understanding of different forms of inequality and underrepresented groups and to promote inclusive policies at regional and national levels. Approved by Senate Decision No SPN-6 as of 18 February 2020, *VU Diversity*

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and Equal Opportunities Strategy 2020-2025 considers gender equality as one of priority areas when implementing the Strategic Objective to "Strive for gender equality in individual areas of science and studies at the University through drafting and implementing gender equality plans with respect to students and staff and through pursuing gender balance in the University's governing bodies". Implementing *Supporting and Implementing Plans for Gender Equality in Academia and Research 2019-2022* (SPEAR), a project funded by Horizon 2020, gender equality plans are being developed in ten departments of VU.

The existence and current level of comprehensiveness of GEP

Public availability and transparency

The GEPs of all mentioned universities are published online and are publicly accessible. Universities aim to include a gender equality dimension in strategic documents and the process of implementation. The plans include measures to raise awareness within the communities of the universities and in society by communicating the importance of equal opportunities and gender equality. Universities prepare regular reports and disseminate the results about various areas of activities.

Scope and coverage

Leadership representation

VMU commits to ensuring fair and equal representation in management bodies and academic units, explicitly mentioned in the Strategic Plan. VU commits to gender balance in governing bodies and has integrated it as a strategic goal under its Diversity and Equal Opportunities Strategy. VTech plan acknowledges the need for gender balance in leadership but lacks detailed measurable targets. KTU sets a goal to increase gender balance in decision-making bodies and includes actions to support this. LHSU policy advocates nondiscrimination in all employment aspects but does not include specific measures for gender balance in leadership.

Recruitment and career progression

VMU GEP emphasizes transparency in application and recruitment processes, removing barriers in career paths, and promoting gender equality in all areas. VU's GEP addresses equality in recruitment and promotion through adherence to the *European Union and Gender Equality* tool and related action lines. VTech promotes equal treatment and aims to eliminate gender-based stereotypes, with general commitments to equal opportunity. KTU has developed an open, transparent, and merit-based recruitment process and collects gender-disaggregated data. LHSU enforces equal treatment in recruitment and career development processes, as outlined in its diversity policy.

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Gender-based violence (GBV) policies

VMU addresses GBV through the implementation of sexual and gender-based harassment prevention policies. It references national guidelines and internal codes of ethics. VU participates in the Horizon 2020 UniSAFE project focused on addressing GBV and outlines institutional tools for response and prevention. VTech plan includes references to sexual harassment prevention guidelines and emphasizes a safe university climate. KTU has an Equality and Violence Prevention Committee and a dedicated policy addressing harassment and violence. LHSU policy includes clear definitions of sexual harassment and psychological violence and outlines procedures for complaint handling.

All five universities have demonstrated a commitment to gender equality through formal policies. VMU, VU, and KTU present the most comprehensive plans. VTech and LUHS show strong components but would benefit from more explicit actions in leadership representation and GBV response mechanisms. Continued monitoring and public engagement will be essential to furthering gender equality in Lithuanian higher education.

Implementation and governance: organizational structure for GEP implementation

Committees, task forces, or offices

VMU has established a Gender Equality Coordinator and incorporates responsibility for GEP implementation into several university departments and the SPEAR project team. VU has a network of gender equality coordinators and dedicated departmental contacts. The Community Development Department plays a central role. Vtech has no designated task force or committee clearly defined in the GEP, though ethical and legal committees handle related matters. KTU has an Equality and Violence Prevention Committee with broad responsibilities and oversight. An Equal Opportunities Ombudsman is designated to oversee policy implementation at LHSU.

Resource allocation

VMU resources are embedded in institutional structures, including human resources for coordination and data monitoring. Although not quantified at VU, human resources and H2020 project involvement (e.g., UniSAFE, ACT) indicate significant support. It is a limited reference to dedicated personnel or budget at VTech. Staff time is specifically allocated, including HR managers and committee members at KTU. Budgetary support is implied through planned training and infrastructure in this university. No explicit mention of dedicated budget or personnel beyond existing structures at LHSU.

Stakeholder engagement

The VMU GEP emphasizes raising awareness among faculty, students, and administration. Communication departments are involved, and social partners are engaged. Faculty and administrative staff are actively involved through departmental GEPs and university-wide training at VU. The VTech GEP calls for university-wide awareness but lacks a structured

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engagement plan. KTU has strong involvement of all university levels through communications campaigns, training, and internal education. Heads of units and students are formally obliged to be familiarized with the policy at LHSU.

Monitoring and accountability

Regular gender-disaggregated data collection is mandated at VMU. There are internal progress reports and ethical commissions in this university. Monitoring in VU is systematic with indicators tracked in annual departmental and university-wide reports. Implementation is reviewed periodically. No detailed plan for performance indicators or reporting frequency is provided for VTech. KTU monitors gender-disaggregated data, integrates GEP updates in annual reports, and reports to the Labor Council. LHSU policy outlines reporting procedures and confidentiality protocols for complaints but lacks robust progress tracking or external oversight.

TABLE 17. MONITORING AND ACCOUNTABILITY MATRIX

University	Monitoring Mechanisms	Performance Indicators	Frequency of Reports	Accountability Structures	Gaps
Vytautas Magnus University	Internal data collection; surveys	Gender-disaggregated data; training	Annual	GEP coordinator; departments	No external oversight mechanism
Vilnius University	Departmental reports; coordinator	Implementation KPIs; participation	Annual	Vice-Rector, Depts, Coordinators	No quantified budget references
Vilnius Tech University	Implicit (ethics/legal bodies)	Not specified	Not specified	Ethics Committee	No clear indicators or reporting cycle
Kaunas University of Technology	Annual data review	Gender indicators in HR reports	Annual	Equality & Violence Committee	External audit not mentioned
Lithuanian University of Health Sciences	Complaint-based review	Not specified	Not specified	Equal Opportunities Ombudsman	No structured performance tracking

Among the five universities, VMU, VU, and KTU have the most robust mechanisms for GEP implementation including institutional structures, monitoring systems, and stakeholder involvement. VTech and LHSU lack clarity in implementation processes, accountability structures, and systematic evaluation procedures. Improvements could include setting measurable indicators, budgeting explicitly for GEP activities, and integrating external review mechanisms.

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Best practices

Mentorship programs

VMU includes a focus on creating positive role models and visibility for women in STEM, though formal mentorship structures are not detailed. VU participates in several Horizon 2020 projects like SPEAR and ACT that include mentorship, capacity-building, and community practices. KTU supports internal mentoring indirectly via HRS4R strategies; encourages women's visibility in leadership. VTech and LHSU have limited evidence of structured mentorship programs in current GEPs.

Gender-sensitive recruitment and promotion

VMU emphasizes transparency, fairness, and gender-balance in all hiring and promotion practices. The university revised ethical and equal opportunities policies. VU incorporates gender equality in recruitment via departmental GEPs. It follows national and EU frameworks. VTech supports nondiscrimination in recruitment but lacks detailed gender-sensitive metrics. KTU is aligned with Open, Transparent and Merit-Based Recruitment (OTM-R); promotes gender-balance through HRS4R practices. LHSU has strong policy foundation prohibiting discriminatory hiring; recruitment procedures follow equal opportunity principles.

Awareness and Training programs

VMU has regular training and awareness initiatives and internal policies on diversity and communication. VU provides university-wide and department-based training and promotes knowledge-sharing through a network of coordinators. VTech includes gender awareness as a goal but lacks clear ongoing training initiatives. KTU organizes annual training sessions and seminars for staff and students. Focus on continuous education and communications. LHSU relies on general policy communication, no specified training mechanisms found.

Flexible work policies and family-friendly initiatives

VMU offers remote work, flexible scheduling, and support for individual needs as part of its inclusive strategy. VU embeds work-life balance in its guiding principles; references are general. KTU addresses work-life balance as a strategic target; includes policies that promote parental leave and flexibility. Vtech and LHSU have mentioned equal opportunities in working conditions, but specific work-life balance policies are not clearly outlined

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TABLE 18. BEST PRACTICES MATRIX

Best Practice Area	Vytautas Magnus University	Vilnius University	Vilnius Tech university	Kaunas University of Technology	Lithuanian University of Health Sciences	Impact/Effectiveness
Mentorship Programs for Underrepresented Genders	Partial	Yes	No	Partial	No	Most advanced at VU through EU projects; KTU encourages women's leadership
Gender-Sensitive Recruitment and Promotion Policies	Yes	Yes	Partial	Yes	Yes	Strongest at VMU, VU, KTU; LUHS solid legal base
Awareness and Training Programs on Diversity and Inclusion	Yes	Yes	Partial	Yes	No	KTU and VU have strong continuous training practices
Flexible Work Policies and Family Friendly Initiatives	Yes	Partial	Partial	Yes	Partial	VMU and KTU most structured
Gender-Based Violence (GBV) Prevention Policies	Yes	Yes	Partial	Yes	Yes	All universities except VTech have structured GBV response mechanisms

Lithuanian universities have made significant strides in institutionalizing gender equality practices, with VMU, VU, and KTU demonstrating strong examples across multiple categories. Continued development of formal mentorship programs and targeted family-friendly measures will further enhance inclusivity. Collaboration on shared tools (like GEP templates and GBV guidelines) could benefit those institutions with partial or less developed practices.

Gaps, challenges, and recommendations

Unaddressed areas

VMU, VU, and KTU provide comprehensive plans, however, VTech and LHSU lack specific measures for areas like mentorship for underrepresented genders, intersectionality in gender analysis, and structured family support mechanisms. All universities should introduce mentorship programs targeted at underrepresented genders, especially in STEM fields and develop structured family support policies including childcare support and flexible leave options.

Resource allocation

KTU and VMU allocate personnel and time for GEP activities. VU integrates resources via EU-funded projects. Vtech and LHSU do not provide specific resource planning. All universities should Allocate dedicated budget lines for GEP implementation and designate full-time or part-time GEP officers or units with clear mandates and responsibilities.

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Stakeholder engagement

VMU and VU actively involve faculties and students; KTU has awareness campaigns. Stakeholder engagement is limited or poorly structured at VTech and LHSU. All universities should establish GEP consultation councils at each university including students, staff, and faculty; introduce awareness workshops and town hall meetings to inform and involve the university community and include GEP updates in departmental meetings and strategic planning discussions.

Improving monitoring and reporting mechanisms

KTU, VMU, and VU report annual progress and gather gender-disaggregated data. VTech and LHSU lack structured monitoring and evaluation processes. All universities should develop and publish annual GEP progress reports with performance indicators; introduce KPIs such as gender distribution in management, retention rates, participation in training, and incidence of GBV reports and include external reviews and audits every 2–3 years.

TABLE 19. GAP ANALYSIS AND RECOMMENDATIONS MATRIX

Gap/Challenge	Vytautas Magnus University	Vilnius University	Vilnius Tech university	Kaunas University of Technology	Lithuanian University of Health Sciences	Recommendations
Lack of gender sensitive recruitment	No gap	No gap	Yes	No gap	Partial	Strengthen recruitment transparency and remove bias in all hiring processes
Weak stakeholder involvement	Partial	No gap	Yes	Partial	Yes	Engage students and staff through GEP councils, training, and communication
Insufficient resources	Partial	Partial	Yes	No gap	Yes	Allocate dedicated budgets and personnel for GEP implementation

Overall, VMU, VU, and KTU demonstrate strong commitments to gender equality with advanced planning and monitoring mechanisms. Vtech and LHSU show commitment through compliance with legal standards but require improvement in planning, resource allocation, and community

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engagement. The recommended actions aim to create consistent and sustainable gender equality practices across all Lithuanian universities.

4.4.3. Consultation Sessions (Project Activity WP2.4)

Discussions of perceptions on gender equality inside HEIs in STEM

Key conclusions

Goals - what is the priority of actions to be implemented at the moment?

Vytautas Magnus University has the Gender Equality Plan (GEP) where the special focus is made on women in STEM initiatives. The GEP aims to reduce horizontal gender segregation and imbalance across disciplines and faculties. At the Faculty of Natural Sciences women comprise over two-thirds of both academic staff and students, suggesting balanced gender representation at entry and mid-levels. However, gender disparities remain in top leadership roles, mirroring broader national and global trends. There is no limitation to start research career in STEM for women in Lithuania, but it is some inequality when we are looking at the leadership positions in STEM. The goal is to incorporate woman at the highest levels in companies and in academia.

Cliffs - what problems and situations do women in STEM disciplines face, and what is challenging?

Preconceived negative attitudes accompanied by mocking comments are faced by the female students as being of discriminating nature, for example, the following statements are sometimes expressed which reinforce gender bias in technical competence and physical capability, discouraging students' confidence and inclusion:

- "You have fewer technical competences".
- "You are not too strong as a man to complete this job".

Female teachers mentioned the challenges they face while balancing between family and work responsibilities, especially at the very beginning of the career. When a female goes for a maternity leave which might take around 1-2 years in Lithuania (in case of two children it may take then up to 4 years), this affects a career hugely most often by suspending it. Though according to the national law any institution must assure a workplace for a female employee coming back from a maternity leave, it still feels like a career regression to compare with male colleagues. STEM field develops very rapidly, and a 2-3 years' career break has a noticeable impact on the novelty of knowledge and productivity of research publications which are important in academia. It is one of the factors of inequality between male and female representatives at the research leadership positions. Also, women becoming pregnant are seen as a major obstacle therefore they are often not hired and if they are already working, they are encouraged to take sick leave because it is believed that a pregnant woman in a laboratory is a hindrance.

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Female students also mentioned the importance of awareness of the inspiring success stories that women in STEM have experienced. Also, some students would like to have more regular initiatives related to the support of females in STEM. The biotechnology sector is one of the leading sectors in Lithuania. One of the career pathways for girls and women in STEM is to start their careers in biotechnology companies. The students see their career opportunities as positive but would like to have more support of their technologically based business ideas during the study years and start-ups or spin-offs initiatives. PhD students mentioned imbalance of male and female student ratio in PhD studies. The number of female PhD students in natural sciences (biology, environmental sciences, chemistry) reaches 80% of total number of PhD students in natural sciences. It shows that there are no barriers for females to start PhD studies in STEM, but it also arises a problem that salaries in academia are less competitive than in industry. Because of that, male graduates prefer to go to industry than continue studies at PhD level.

Needs - what is needed to deal with reefs - the most important conclusions

- Lithuanian and international fulltime students meet different problems in their studies and future carrier.
- International female students face higher barriers than local peers due to cultural differences, legal limitations, and language.
- Many inappropriate comments are more related to race or ethnicity than gender.
- More attention should be paid to the female students with disabilities in STEM. The laboratory environment, like the height of laboratory tables and the spacing between tables in laboratories should be more accessible to students with mobility disabilities.
- Some adoptive teaching materials could be prepared for students having hearing impairments.

The priority actions for women in STEM support should be the following:

- Enhance visibility of female role models in leadership and research.
- Provide stronger institutional support for maternity returnees to re-integrate into academic life.
- Initiate female-led research projects.
- Facilitate collaboration with female leaders from industry for the joint research and innovation projects.
- Create inclusive career development programs.

Conclusion

The completed surveys show that both professors and students recognize progress in gender equality, but there are still challenges which remain. Among professors, only a small group openly doubts on equal gender opportunities, but experiences of gender bias, such as not being taken

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seriously or hearing sexist comments were reported showing these issues remain present in academic life. Students share similar concerns: some expressed uncertainty about whether women are treated equally in their fields, and several noted that gender bias can influence classroom interactions and opportunities. A recurring problem is lack of awareness: many respondents admitted they do not know about existing anti-discrimination support services or how to access them. This indicates that the university should improve communication about available support. On a more positive note, the majority of professors and students interviewed expressed their interest in participating in programs like mentoring, workshops, or networking. While not everyone is ready to commit, the openness to involvement shows real potential for building stronger support structures and addressing gender-related challenges at the university.

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APPENDICES

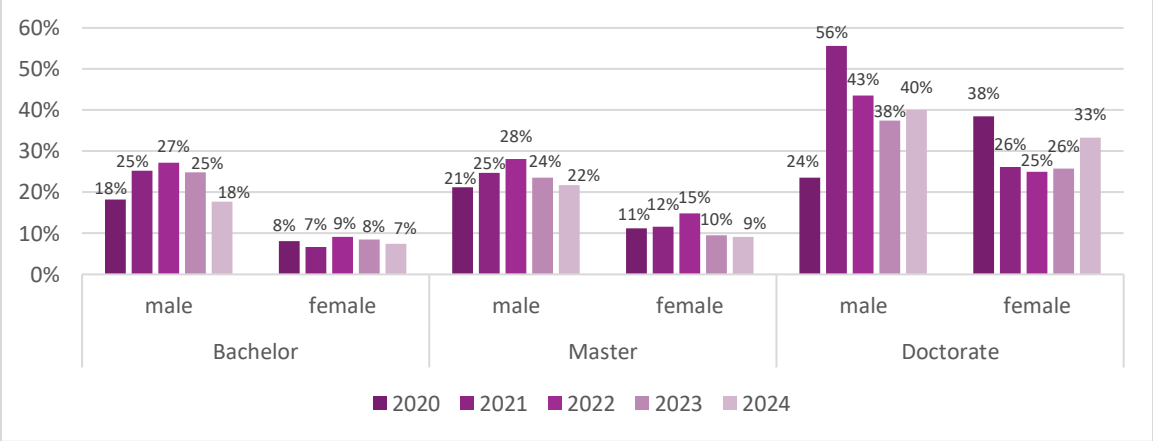

FIGURE 20. WMU – SHARE OF MALE AND FEMALE STUDENTS IN STEM FIELDS (2020-2024)

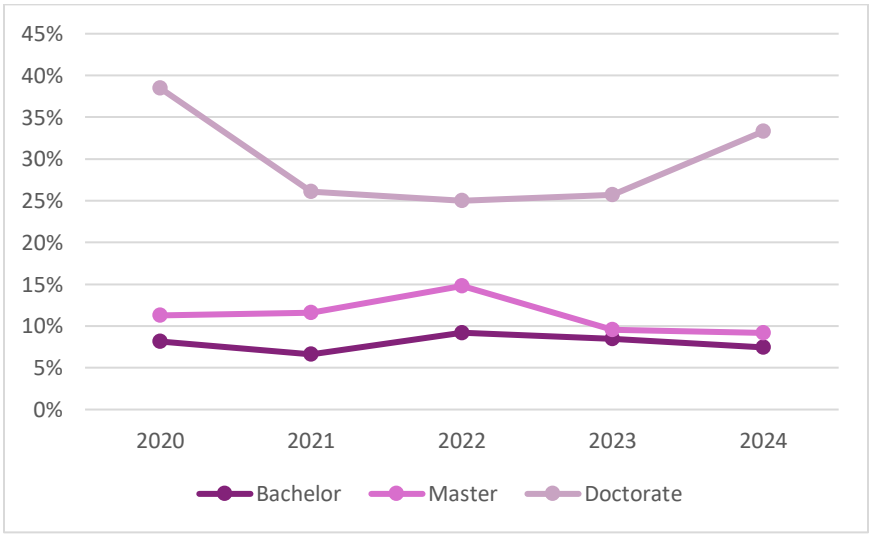

FIGURE 21. WMU - PERCENTAGE OF FEMALE STUDENTS IN STEM (2020-2024)

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TABLE 20. NUMBER OF ADMISSION STUDENTS BY LEVEL OF EDUCATION AND DETAILED STEM *FIELD (SHARE OF MALE AND FEMALE ADMISSIONS)*

Fields of study				ISCED level of education – 8 Doctoral level				
Broad field		**Narrow field**		**2020**	**2021**	**2022**	**2023**	**2024**
05	Natural sciences, mathematics and statistics	051	Biological and related sciences	3 (F) 1 (M)	2 (F) 2 (M)	4 (F) 1 (M)	5 (F) 2 (M)	6 (F) 2 (M)
		052	Environment	2 (F) 0 (M)	1 (F) 2 (M)	1 (F) 1 (M)	1 (F) 1 (M)	3 (F) 0 (M)
		053	Physical sciences					
		054	Mathematics and statistics					
06	Information and communication technologies	061	Information and Communication Technologies (ICTs)	0 (F) 1 (M)	0 (F) 1 (M)	0 (F) 1 (M)	1 (F) 0 (M)	1 (F) 1 (M)
07	Engineering, manufacturing and construction	071	Engineering and engineering trades	5 (F) 2 (M)	3 (F) 5 (M)	1 (F) 7 (M)	2(F) 6 (M)	4 (F) 7 (M)
		072	Manufacturing and processing					
		073	Architecture and construction					
	Total: all fields of education			10 (F) 4 (M)	6 (F) 10(M)	6 (F) 10(M)	9 (F) 9 (M)	14 (F) 10 (M)

TABLE 21. TO BE ADDED

Fields of study				ISCED level of education – 7 Master's level				
Broad field		**Narrow field**		**2020**	**2021**	**2022**	**2023**	**2024**
05	Natural sciences, mathematics and statistics	051	Biological and related sciences	47 (F) 12 (M)	47 (F) 15(M)	50 (F) 5 (M)	34 (F) 16 (M)	35 (F) 10(M)
		052	Environment	13 (F) 8 (M)	19 (F) 5 (M)	16 (F) 9 (M)	21 (F) 8 (M)	21 (F) 11 (M)
		053	Physical sciences	2 (F) 8 (M)	2 (F) 6 (M)	1(F) 7 (M)	0 (F) 6 (M)	4 (F) 3 (M)
		054	Mathematics and statistics	5 (F) 1 (M)	3 (F) 4 (M)		5 (F) 2 (M)	
06	Information and communication technologies	061	Information and Communication Technologies (ICTs)	4 (F) 9 (M)	3 (F) 10(M)	22 (F) 39(M)	0 (F) 25(M)	9 (F) 27(M)
07	Engineering, manufacturing and construction	071	Engineering and engineering trades	6 (F) 31 (M)	5(F) 33(M)	6 (F) 37(M)	3 (F) 32 (M)	1 (F) 39(M)
		072	Manufacturing and processing					
		073	Architecture and construction					
	Total: all fields of education			77 (F) 69 (M)	79 (F) 73(M)	95 (F) 97(M)	63 (F) 89 (M)	70 (F) 90(M)

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TABLE 22. TO BE ADDED

Fields of study				ISCED level of education – 6 Bachelor's level				
Broad field		Narrow field		2020	2021	2022	2023	2024
05	Natural sciences, mathematics and statistics	051	Biological and related sciences	35 (F) 14 (M)	33 (F) 21(M)	45 (F) 17 (M)	33 (F) 13 (M)	29 (F) 16 (M)
		052	Environment	17 (F) 12 (M)	11 (F) 10(M)	6 (F) 14 (M)	18 (F) 8 (M)	6 (F) 4 (M)
		053	Physical sciences					
		054	Mathematics and statistics	6 (F) 2 (M)		4 (F) 5 (M)	5 (F) 0 (M)	14 (F) 1 (M)
06	Information and communication technologies	061	Information and Communication Technologies (ICTs)	17 (F) 48 (M)	13 (F) 41(M)	28 (F) 78 (M)	24 (F) 72 (M)	26 (F) 61(M)
07	Engineering, manufacturing and construction	071	Engineering and engineering trades	4 (F) M16(M)	0 (F) 21(M)	5 (F) 8 (M)	3 (F) 22(M)	
		072	Manufacturing and processing					
		073	Architecture and construction					
	Total: all fields of education			79 (F) 92(M)	57 (F) 93(M)	88 (F) 122(M)	83 (F) 115(M)	75 (F) 82(M)

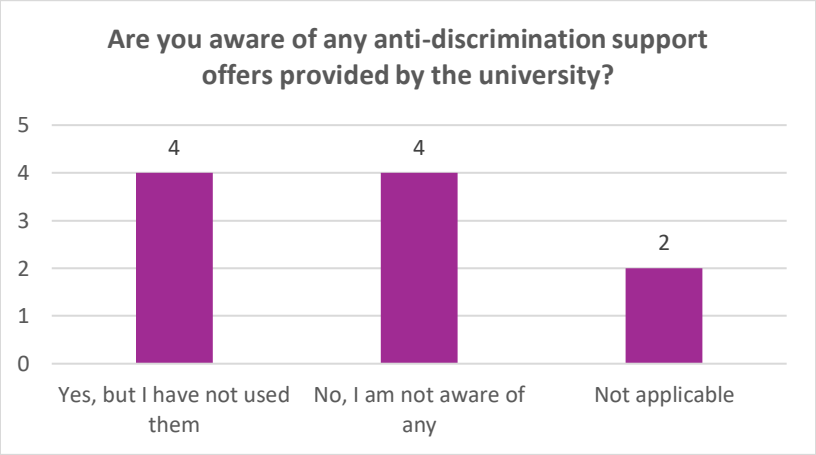

FIGURE 22. VMU – AWARENESS ABOUT ANTI-DISCRIMINATION SUPPORT PROVIDED BY THE UNIVERSITY

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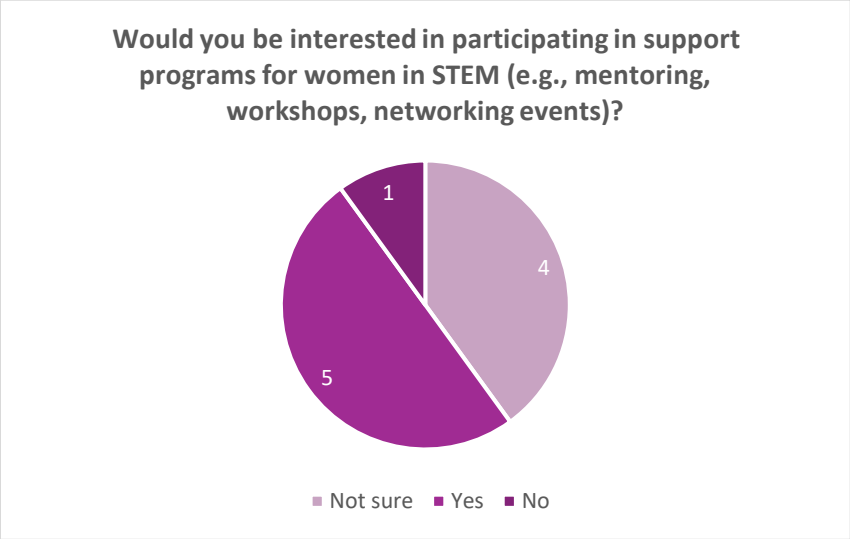

FIGURE 23. VMU – INTEREST IN PARTICIPATING IN SUPPORT PROGRAMS FOR WOMEN IN STEM

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6.5. Norway: University of South-Eastern Norway (USN)

6.5.1. Statistical Datasheets (Project Activity WP2.2)

General organization of the educational system in Norway

There are several established regulations in Norway for prioritizing education and research in the STEM areas[1]. Langfeldt et al. (2014) offer an overview of central strategies and initiatives towards increasing female inclusion within STEM related studies: the earliest highlighted initiative by national education- and research department was in 1998, and official allocation policies were implemented by the Ministry of Education to promote higher female inclusion to engineering programs and STEM-faculty positions in the 2009 to 2013 period.

The Norwegian Directorate for Higher Education and Skills (HKDIR) publishes annual reports on the state of higher education (in Norwegian) that offer key figures of the entire higher education sector and trends over time (HKDIR, 2025b). About three out five students in Norway are female, but the gender balance between study areas shows clear differences: While the female-to-male ratio for health-, social- and sports studies are roughly 79% to 21%, the female-to-male ratio for STEM related areas are 36% to 64% (Haugen et al., 2024, p. 31). Data extracted from the database for statistics over higher education (DBH) corroborates these summative findings, showing that the female-to-male ratios in completed graduates varies between STEM field, social sciences, and economics and management (table 1). In particular, the female-to-male ratio in the engineer education is 20%. Thus, universities and university colleges in Norway still have less representation of females in STEM related studies, seemingly acknowledged as important areas to improve by national regulations.

Overview of nationally offered STEM-related study programs in USN

General overview

The University of South-Eastern Norway (USN) is Norway's fourth largest university of approximately 18,000 students and 1,900 staff spread over eight campuses (USN, 2025a). This report, as part of the ST3AM project, will focus on USN School of Business, where the USN ST3AM team is affiliated to the Department of Business, Strategy and Political Science.

The department is located in both cities of Kongsberg and Drammen in Norway's south-eastern region. The department has about 40 employees and 800 students (USN, 2025b). Our department offers the following studies: Bachelor's in visual communication offered in campus Drammen; Bachelor's in Economics and Management offered in both Drammen and Kongsberg; Bachelor's in Political Science offered in campus Drammen; Masters of Science in Innovation and Technology Management in campus Kongsberg; and PhD in Management in campus Drammen. Campus Kongsberg also receives incoming exchange students that choose to stay for one or two academic semesters, categorized as 'exchange programs business administration'. The current

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report uses data and statistics obtained through our internal unit for 'analysis, strategy and business management' for the Bachelor and Master programs, while data and statistics for the PhD program is separate and unavailable for the moment. Should the team be able to obtain the PhD data in a timely manner we can update this report accordingly. From the general overview of gender representation in STEM and non-STEM fields at USN, we observe similar alignment in female representation to the trends of the national statistics over higher education in Norway, further highlighting a need for improved female inclusion at USN.

Information on programs' duration, entry requirements, and specializations

The study programs under the Department of Business, Strategy and Political Science follow national guidelines, set and designated by Universities Norway for Economics and Administration (UHR), for the specific durations and entry requirements, while specializations are offered depending on demand and education strategy respectively (UHR, 2018). Specifically, the Bachelor programs have an expected duration of normal progression of three years, or six academic semesters. To complete a Bachelor's degree, the student must have obtained at least a total of 180 study credits (studiepoeng). In one academic semester, either at autumn or spring, the students are expected to register and complete courses equivalent to at least 30 study credits. The entry requirements across the Bachelor programs require a 'Higher Education Entrance Qualification' (Generell studiekompetanse), which is the general basis for admission to universities and university colleges in Norway after completing upper secondary school (HKDIR, 2025a). In the case where there are more qualified applicants than the available number of enrolments to a program, the program will limit qualified students depending on their quota points. There are two tracks of quota points: "first-diploma quota" (førstegangsvitnemål) points are calculated as a sum of the applicant's upper secondary school average grades, extra credits for STEM subjects, extra credits for language courses, and possible points given for the applicant's gender subject the course applied (e.g. male applicants for nurse programs). "Ordinary quota" is calculated as the sum of first-diploma quota points in addition to possible credits for applicant's previous enrolments, e.g. higher education, military services or vocational school, and possible credits for the applicant's current age: starting in the year applicant turn 20 years old; they receive two extra credit points for each year after completion of upper secondary school (Samordna-Opptak, 2025).

Current Status of female inclusion in STEM-related study programs (statistics)

This section highlights the acquired data and statistics regarding the current status of female inclusion on several key targets specified in the ST3AM report template, where available. Our data and statistics are drawn from a given year of student enrolment to that particular cohort (e.g. students enrolled in 2020 are in the 2020-cohort). Therefore, our data and statistics for the number of student enrolments, graduation, and dropouts, are based on the number of students of that cohort. This is because our data and statistics are limited in tracking the total number of dropouts or graduates for each given year regardless of their cohort year.

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For gender distribution and engagement in USN programs, we find in general more female enrolment, with shares of females above 50%. In campus Kongsberg, the share of females in the economics and management program, and the incoming exchange program, are slightly lower. The master's program also sees a larger increase in the share over this period. The Bachelor's in Visual Communication program shows the highest percentage of female enrolment of the 2020 to 2024 period: a steady female-to-male ratio of 80% in the period. The Master of science in Innovation and Technology Management shows significant progress and improvement in balancing the female-to-male ratio in enrolment, from 35% in 2020 to 51% in 2024. General engineering at USN have female enrolment at much lower shares at around 20%.

The findings illustrate the gender distribution across disciplines and emphasize the need for continued gender-inclusive efforts, especially in areas like engineering, where female participation remains low. Including Visual Communication for this report, a field with high female enrolment, aligns well with the ST3AM project's goals to increase female participation in STEM through innovative and interdisciplinary approaches. By leveraging Visual Communication alongside mentorship, curriculum reform, and gender-sensitive policies, we can create an educational environment that supports and retains female students in STEM, further aid the gender equality goals in between and across programs.

For the gender-based dropout and graduation rates across programs, we notice a general tendency of drop-outs rate ranging from 20 to 50% regardless of gender. As higher education in Norway has no high-tuition fees for Norwegian students, the number of dropouts tend to lie around this average at the national level. The overview does show that the number of female graduates is higher than male graduates; and that the number of female dropouts is lower or the same as male graduates. The Visual communication program with higher female enrolled students shows a higher share of graduates and lower shares of dropouts than for male students. Both Economics and Management programs, and the Political Science program, have varied graduate and drop-out levels. The rate of female graduate of the Master's program is higher than male, while drop-outs in the Master's program are of the same but much lower rates below 30%.

For the female to male enrolment ratios by program, there is a general observation that there are some differences between programs. For both economics and management program, Kongsberg has more male than female enrolment and Drammen has more female than male enrolment.

For outbound mobility, there are some differences. There is similar or greater number of male outbound mobility in the BSc in Economics and Management and the MSc in Innovation and Technology Management, while there is a much larger level of female outbound mobility in the BSc in Visual Communications.

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Future Career Opportunities for Graduates

Female graduates of USN have several paths and employment opportunities available for bridging the gap between technology and business: USN students will have the capability to integrate technology to creative design thinking processes, achieve higher impact roles in leadership positions, and acquired critical knowledge and skills necessary in high-tech industries, public and private enterprises. Graduates from the programs are highly sought after for their ability to bridge the gap between technology and business, making them invaluable assets in today's fast-paced, innovation-driven economy (USN, 2025b).

An overview of the MSc in Innovation and Technology Management program is presented in a short video by USN (28 Jan 2021) on YouTube as an example of opportunities and successful graduation. Additionally, USNs official LinkedIn group regularly make posts to highlight career opportunities for USN graduates (see one example in Norwegian, USN (2025c)).

6.5.2. Readiness of Gender Equality Plans (GEP) (Project Activity WP2.3)

Contextual background

National Requirements

Norway's higher education system mandates that universities implement a Gender Equality Plan (GEP) to maintain accreditation and government funding. The Norwegian Directorate for Higher Education and Skills (HKDIR) monitors this compliance, providing key figures on gender balance in higher education. According to Haugen et al. (2024), there is a significant gender disparity in STEM fields, with female students representing only 36% of STEM enrolments, compared to 64% male students.

These national requirements align with the European Union's gender equality directives and global initiatives like the United Nations' Sustainable Development Goals (SDG 5 – Gender Equality, and SDG 4 – Quality Education). USN's GEP is expected to align with these broader goals, focusing on enhancing female participation in STEM and reducing gender disparities in academic and research fields.

The national statistics underscore that female representation in engineering is particularly low, at only 20% of enrolments, which presents a critical area for USN's GEP to address.

Institutional Context

At USN, gender equality is a strategic priority, particularly in STEM disciplines such as engineering, economics, and technology management. The university is committed to improving female representation in these fields, both among students and in academic leadership. Despite these efforts, challenges remain in achieving gender parity, especially in senior academic and administrative positions. Historically, USN has made strides in integrating gender equality into its

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strategic plans. However, societal and cultural factors continue to influence recruitment and career advancement, especially in male-dominated fields like engineering.

Current State of GEP at USN

Public Availability and Transparency

USN's GEP is currently an internal document and lacks sufficient public visibility. Ensuring transparency in the GEP's implementation is crucial for accountability and fostering wider engagement. Widespread dissemination of the GEP would enable external stakeholders to provide valuable feedback, promoting inclusivity and enhancing the effectiveness of the plan.

Scope and Coverage

The current GEP at USN addresses gender-sensitive recruitment, career progression, and gender-based violence prevention, but it requires more comprehensive focus in leadership roles and the integration of gender-sensitive recruitment policies across all disciplines, especially STEM.

Implementation and Governance

Organizational Structure for GEP Implementation

USN has created committees and task forces tasked with overseeing the GEP's implementation, but these structures are not fully integrated into the broader governance of the university. More formal integration into the university's decision-making structures is necessary to effectively drive gender equality reforms across all areas.

Monitoring and Accountability

The monitoring mechanisms for assessing the success of USN's GEP are currently irregular and lack formalized procedures. Clear performance indicators are needed to track the

Best Practices in GEP Implementation

Mentorship Programs

USN has implemented mentorship programs aimed at increasing female participation in STEM. These programs have proven effective in improving retention rates, particularly within the MSc Innovation and Technology Management program. These initiatives are essential for fostering women's academic and professional growth in male-dominated fields, contributing to a more inclusive academic environment.

Gaps, Challenges, and Recommendations

Gaps in GEP Implementation

- **Leadership Representation:** Female representation in senior academic and administrative roles is still below desired levels.

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- **Recruitment in STEM:** Gender-sensitive recruitment practices should be applied more broadly within STEM disciplines.
- **Monitoring and Accountability:** USN should establish more structured, consistent monitoring systems to assess the success of the GEP.

USN has made considerable progress in implementing its Gender Equality Plan (GEP), particularly in STEM fields like Innovation and Technology Management. However, challenges persist in leadership representation and gender-sensitive recruitment within STEM. By addressing these gaps, USN can further strengthen its GEP and continue advancing gender equality in higher education.

6.5.3. Consultation Sessions (Project Activity WP2.4)

Key conclusions from the meeting with faculty

Goals - what is the priority of actions to be implemented at the moment?

The focus group discussion emphasized the need for systemic changes in higher educational institutions to address gender inequality in STEM disciplines. Leadership must play a central role in fostering an inclusive culture, setting clear policies, and providing resources for gender equality. Additionally, engaging students and faculty in discussions and initiatives around gender equality is crucial for creating lasting change. As such, several actions were identified involving different actors and levels of the institution:

- **General management** needs to be trained in gender inclusiveness, provide transparency regarding its gender equality plans and promote a zero-gender discrimination policy. Recruitments and promotions are identified as defining events for observing the "behavior" of leadership regarding gender equality. Management plays a central role in career development and therefore needs to make recruitment and promotion criteria clear. However, fairness in treatment does not necessarily mean equal treatment in the case of gender inclusiveness, at least not at all times. For instance, allowing flexible research objectives after parental leave can enhance gender parity.
- **Project leaders** also need to receive leadership training. Recruitment within a team for a project cannot be communicated as based on gender only, in order to reach some parity goals. Project leaders need to ensure that data is shared transparently to all the members of the team, not just between "male pals".
- **Faculty** should benefit from peer mentorship programs in STEM disciplines. Besides, equity in learning goals for students can require changes in the curriculum. Female students in ICT prefer to be given processes and guidelines rather than engage in trial-and-error type of dynamics.

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- **Students** should engage in creating change in different arenas. This can include student bodies/unions, activities offered by the university, participation in social media campaigns, and in-class projects. Realizing their own prejudices can be a strong vector for raising awareness on gender inequality in STEM disciplines.

Cliffs - what problems and situations do women in STEM disciplines face, and what is challenging?

- The communication styles within academia can be aggressive and may disadvantage women, reinforcing traditional gender roles and expectations.
- A rigid work setup that does not accommodate work-life balance is a major barrier, making it difficult for women to manage professional responsibilities alongside family commitments.
- Gender-based harassment and discrimination, though sometimes subtle, persist in academic settings, requiring stronger policies and accountability mechanisms to address these issues.
- Inequality in recruitment processes and promotion criteria exacerbates gender disparities, as women may not receive equal opportunities or recognition.
- There is a lack of mentorship and visible female role models in STEM, which can hinder women's career progression and confidence.

Needs - what is needed to deal with reefs - the most important conclusions

- The existing institutional culture often perpetuates gender inequality through implicit biases and unequal expectations for men and women. There is a need for a culture of inclusion and flexibility to counteract these inequalities.
- There is a need for increased awareness and inclusiveness in policies and practices within academic institutions to ensure gender equality is actively pursued and achieved. A stronger accountability needs to be promoted.
- Channels for feedback need to be created for the staff to share their experiences with their hierarchy.
- Role models were identified as being crucial for both faculty and students in STEM disciplines.
- In-class projects need to promote gender equality whether in their formulation, in the composition of the groups and in the type of work expected by the lecturer.

Key conclusions from the meeting with students

Goals - what is the priority of actions to be implemented at the moment?

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- **Student recruitment processes** often fail to actively encourage applications from women. The ads/ language/ promotion material doesn't target females sufficiently- is too male dominated. Institutions should use promotional material that explicitly shows an inclusive learning environment and flexible schedules at the Master level.
- **Mentorship and role models**: Institutions should highlight the achievements of female leaders in STEM to inspire and motivate the next generation. Active mentorship programs for female students can include figures from the university or from the industry.
- **Education**: Raising awareness about unconscious biases is crucial for creating inclusive environments. Academic programs should incorporate gender-sensitive teaching methods and materials to ensure that all students feel included and supported.
- **Sharing experiences**: prejudice can be experienced in any setting and at any age, which tends to embed some gendered behaviors. Students need to identify and share their biases, allowing female students to feel empowered.

Cliffs - what problems and situations do women in STEM disciplines face, and what is challenging?

- STEM fields, especially engineering and technology, are often stereotyped as being more suitable for men. This perception discourages women from pursuing these careers.
- Female students in STEM frequently report feeling out of place in environments dominated by male colleagues. Women often face subtle forms of discrimination, such as being excluded from informal networks or social events. Participants mentioned inappropriate jokes, dismissive attitudes, and a general lack of respect for women's contributions.
- Many universities lack policies that support work-life balance, such as flexible working hours or parental leave, making it harder for women to combine study and other responsibilities (running a home, caring for elderly parents or children).
- The lack of visible female leaders and mentors in STEM and academic leadership roles is a significant barrier. Without role models, young women may struggle to envision themselves in similar positions.
- Women are underrepresented in senior academic positions, such as full professorships and leadership roles in departments and research projects. This perpetuates the cycle of inequality and does not encourage students.

Needs - what is needed to deal with reefs - the most important conclusions

- Participants discussed how institutional cultures often favor male students, with informal networks (e.g., "boys' clubs") playing a significant role in group / study group/ exam group sets ups. Women are frequently excluded from these networks. Women may then create a female group for exam projects. A solution could be active group set-ups- where the

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professor creates work groups / exam groups with mixed genders. Q&A sessions in the classroom should be structured so that women are encouraged to speak up and their views supported by the professors and whole class- a culture of inclusion, awareness and respect is then developed in the classroom.

- Institutions often lack robust mechanisms to address harassment or discrimination, leaving women vulnerable and unsupported. Institutions could be better at setting policies for 'what is OK' and not OK.
- Female students and professionals need access to mentors who can guide them through their academic and professional journeys.

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APPENDICES

TABLE 23. GRADUATES RECEIVING DIPLOMAS PER STUDY AREA FOR HIGHER EDUCATION IN NORWAY

Study area	2020		2021		2022		2023		2024	
	F	M	F	M	F	M	F	M	F	M
	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total
Engineer education	515	2095	525	2200	550	1935	565	2030	485	1825
Mathematics and natural sciences	1620	2510	1765	2730	1770	2645	1880	2865	1570	2555
Social sciences	2565	1560	2825	1730	2855	1790	2910	1755	2410	1505
Technology	870	1840	905	1960	920	2010	920	2075	510	1055
Economics and Management studies	4750	4860	4840	5065	5255	5345	5330	5495	4255	4405
Total	10325	12860	10865	13695	11355	13725	11605	14215	9230	11350

Source: https://dbh.hkdir.no/tall-og-statistikk/statistikk-meny/kjonn

TABLE 24. GENDER REPRESENTATION IN STEM AND NON-STEM FIELDS AT USN

Field	Female Representation (%)	Male Representation (%)
STEM (Overall)	36%	64%
Engineering	20%	80%
Mathematics and Natural Sciences	36%	64%
Economics and Management	50-60%	40-50%
Social Sciences	70%	30%

TABLE 25. INFORMATION ON PROGRAMS' DURATION, ENTRY REQUIREMENTS, AND SPECIALIZATIONS

Program	Duration	Entry requirement	Specialization(s)
BSc Visual communication (Drammen)	6 semesters 180 study credits	Higher Education Entrance Qualification (generell studiekompetanse): 47.5 ordinary quota 39.6 first-diploma quota	-
BSc Economics and Management (Drammen)	6 semesters 180 study credits	Higher Education Entrance Qualification (generell studiekompetanse): 43.6 ordinary quota 39.4 first-diploma quota	6th semester*: a) Finance b) Marketing Management
BSc Economics and Management (Kongsberg)	6 semesters 180 study credits	Higher Education Entrance Qualification (generell studiekompetanse): "all" ordinary quota "all" first-diploma quota	6th semester*: a) Technology Management b) International Management

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BSc Political science (Drammen)	6 semesters 180 study credits	Higher Education Entrance Qualification (generell studiekompetanse): 41.8 ordinary quota 40 first-diploma quota	-
MSc Innovation and Technology Management (Kongsberg)	4 semesters 120 study credits	Bachelor's degree or equivalent in business administration or engineering. *An equivalent education in science and engineering or social sciences may qualify for admission.*	3rd semester: a) Industrial management b) Systems engineering
Exchange programs Business Administration	1-2 semester(s) 30-60 study credits	- completed at least 60 ECTS or equivalent within business administration, management, marketing, entrepreneurship, or related fields. - requires a good command of the English language, both spoken and written (English proficiency equivalent to B2 as recommended)	courses cover the topics entrepreneurship, international business, project management, digital transformation, data analytics, technology management and cross cultural management

**campus-specific specialization are offered to all Economics and management students across all campuses. Source: (USN, 2025b).*

TABLE 26. GENDER DISTRIBUTION AND ENGAGEMENT IN USN PROGRAMS

Program Area	Female Enrolment (%)	Male Enrolment (%)	Key Gender-Inclusive Strategies in Curriculum	Gender Equality Goals
BSc in Visual Communication (USN)	80-86%	14-20%	Integration of creativity with technology; design thinking methodologies.	Foster interdisciplinary approaches, enhance female representation in STEM.
BSc in Engineering (General)	20%	80%	Minimal focus on creative, gender-sensitive approaches.	Increase female enrollment through gender-sensitive recruitment and curriculum reforms.
BSc in Mathematics and Natural Sciences	36%	64%	Technical and theoretical focus, with little emphasis on gender inclusion.	Expand gender-sensitive teaching practices and mentorship in STEM fields.
BSc in Economics and Management (USN)	50-60%	40-50%	Gender-inclusive recruitment strategies, balanced course offerings.	Encourage female participation through tailored mentoring programs and inclusive curriculum.
MSc in Innovation and Technology Management	35-51%	49-65%	Focus on technology management with gender equality measures.	Improve female engagement by applying inclusive teaching and mentorship practices.
BSc in Political Science (USN)	54-61%	39-46%	Broad interdisciplinary approach, more	Promote gender-sensitive academic environments,

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			balanced gender distribution.	encouraging women into leadership roles in social sciences.
Master's in Digital Transformation (USN)	40-45%	55-60%	Emphasis on digital leadership and innovation, with gender-sensitive practices.	Address gender disparities in digital leadership and tech-driven innovation.
PhD Programs in STEM (USN)	Varies	Varies	Limited female participation in senior academic roles.	Increase female representation at the PhD and leadership levels through targeted policies.

TABLE 27. FEMALE ENROLLMENT TRENDS OVER TIME IN PROGRAMS

Program	Female Enrolment (%)	Year 2020	Year 2021	Year 2022	Year 2023	Year 2024	Notes
BSc in Visual Communication (Drammen)	80-86%	80%	86%	86%	81%	82%	Consistently high female representation
BSc in Economics and Management (Drammen)	51-62%	52%	51%	62%	59%	58%	Steady female participation
BSc in Economics and Management (Kongsberg)	40-46%	42%	40%	42%	43%	46%	Higher in 2024 due to new programs
MSc in Innovation and Technology Management (Kongsberg)	35-51%	35%	35%	43%	50%	51%	Significant growth in female participation
BSc in Political Science (Drammen)	53-61%	54%	53%	54%	56%	61%	Increasing trend in female students

TABLE 28. GENDER-BASED DROPOUT AND GRADUATION RATES ACROSS PROGRAMS

Program	Female Graduation Rate (%)	Male Graduation Rate (%)	Female Dropout Rate (%)	Male Dropout Rate (%)
BSc in Visual Communication (Drammen)	77-83%	54-80%	23-30%	46-55%
BSc in Economics and Management (Drammen)	52-78%	51-68%	19-44%	32-61%
MSc in Innovation and Technology Management (Kongsberg)	67-100%	84-92%	0-16%	8-26%
BSc in Political Science (Drammen)	55-70%	52-67%	21-32%	29-48%

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Table 29. Female to Male Enrollment Ratios by Program

Program	Female Enrolment (%)	Male Enrolment (%)
BSc in Visual Communication (Drammen)	80-86%	14-20%
BSc in Economics and Management (Drammen)	51-62%	38-49%
BSc in Economics and Management (Kongsberg)	40-46%	54-60%
MSc in Innovation and Technology Management (Kongsberg)	35-51%	49-65%
BSc in Political Science (Drammen)	53-61%	39-47%

Table 30. Outbound Mobility by Gender in USN Programs

Program	Female Outbound Mobility (%)	Male Outbound Mobility (%)
BSc in Visual Communication (Drammen)	60%	40%
BSc in Economics and Management (Drammen)	48%	52%
MSc in Innovation and Technology Management (Kongsberg)	35%	65%

Table 31. Alignment of USN's Gender Equality Strategy with National Goals

Focus Area	Current Alignment	Challenges
Gender Equality in STEM	Gender equality is a priority, but progress is slow	STEM fields continue to be male dominated
Leadership Representation	Efforts to increase female representation in leadership roles	Gender disparities remain in senior roles
Inclusivity and Diversity	Gender equality embedded in strategic planning	Slow integration of gender-inclusive policies

Table 32. GEP Scope at USN

GEP Area	Coverage at USN	Identified Gaps
Leadership Representation	Moderate	Need for enhanced female representation in senior leadership roles
Recruitment & Career Progression	Partial	Gender-sensitive recruitment practices need to be applied across all STEM programs
Gender-Based Violence (GBV)	Moderate	Limited awareness campaigns and support systems across campuses
Public Availability	No	Need for broader dissemination of the GEP

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6.6. Poland: Lodz University of Technology (TUL)

6.6.1. Statistical Datasheets (Project Activity WP2.2)

General organization of the educational system in Poland

Compulsory education in Poland lasts until the age of 18, and it includes one year of preschool education, eight years of primary education, and at least two years of secondary education[1]. The higher education system in Poland is structured into several key stages:

• **First-cycle studies:** bachelor's degree programs for candidates with a high school diploma, which provide knowledge and skills in a specific field of study and prepare students for work within a particular profession, leading to a bachelor's degree (licencjat or inżynier).

• **Second-cycle studies:** master's degree studies for candidates with a bachelor's or engineer's degree, which provide specialist knowledge in a specific field of science and prepare for creative work in a specific profession, leading to a master's degree or equivalent; graduates of second-cycle studies may apply for admission to doctoral school.

• **Long-term studies:** master's degree studies for candidates with a high school diploma, which provide specialized knowledge in a specific field of science and prepare for creative work in a profession, leading to a master's degree or equivalent; graduates of long-term studies may apply for admission to a doctoral school.

• **Doctoral education (in doctoral schools):** open to candidates with a master's degree or equivalent, which provides advanced knowledge in a specific field or scientific discipline and prepares students for independent and creative research and for obtaining a doctoral degree (doctor).

• **Postgraduate studies without a degree:** usually fee-based, for holders of a higher education diploma/degree.

Overview of nationally offered STEM-related study programs in the Lodz University of Technology (TUL)

General overview

The Lodz University of Technology (TUL) in Lodz is an excellent technical university with a long educational history dating back to the 19th century. Currently, it is one of the best technical universities in the country with approximately 13,000 students enrolled in 60 available fields of study offered by nine faculties. TUL conducts scientific research, introduces modern technologies, patents, and solutions to the market, and is a valued partner of the world's leading research centers.

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The Lodz University of Technology was the first university in Poland to receive the HR Excellence In Research logo. The university has also an International Education Center, which has been offering courses in 14 fields of study in English and French for 25 years. The university has a modern, extensive campus, and the Lodz Sports and Teaching Center – "Zatoka Sportu" (Sports Bay) – features an Olympic swimming pool, a multifunctional sports hall, and gyms, among other facilities.

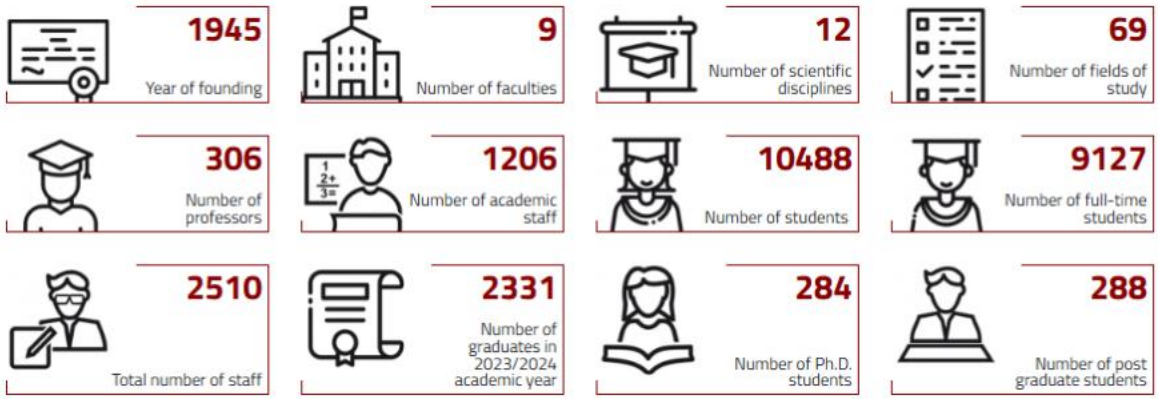

FIGURE 24. OVERVIEW OF THE LODZ UNIVERSITY OF TECHNOLOGY

In 2024, a total of 10,488 students were enrolled at Lodz University of Technology, including 3,768 women, accounting for 36.10%. In 2024, Lodz University of Technology educated 284 doctoral students (including full-time students and doctoral candidates at the Interdisciplinary Doctoral School) - women accounted for 44,40% of the total doctoral students.[6]

At Lodz University of Technology, STEM programs tend to have higher female enrolment rates than others. Generally, programs like Biomedical Engineering and Biotechnology attract more female students. These fields often appeal to women due to their direct applications in healthcare and the life sciences. Additionally, initiatives like the ST3AM Project aim to further increase female participation in STEM by promoting gender balance through education reform, mentorship, and the creation of supportive environments.

Information on programs' duration, entry requirements, and specializations

An overview of the STEM-related programs at Lodz University of Technology, including their duration, entry requirements, and specializations:

Bachelor's Programs

a. Computer Science

- Duration: 3.5 years (7 semesters)
- Entry Requirements: High school diploma with good grades in mathematics and a science subject; proficiency in English.
- Specializations: Software Development, Data Science, Artificial Intelligence.

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b. Biomedical Engineering

- Duration: 3.5 years (7 semesters)
- Entry Requirements: High school diploma with good grades in biology, chemistry, and mathematics; proficiency in English.
- Specializations: Medical Devices, Biomechanics, Medical Imaging[12].

c. Mechanical Engineering

- Duration: 3.5 years (7 semesters)
- Entry Requirements: High school diploma with good grades in mathematics and physics; proficiency in English.
- Specializations: Manufacturing Engineering, Automotive Engineering, Robotics.

Master's Programs

a. Computer Science and Information Technology

- Duration: 1.5-2 years (3-4 semesters)
- Entry Requirements: Bachelor's degree in a related field; proficiency in English.
- Specializations: Cybersecurity, Machine Learning, Software Engineering.

b. Human-Computer Interaction

- Duration: 1.5-2 years (3-4 semesters)
- Entry Requirements: Bachelor's degree in a related field; proficiency in English.
- Specializations: User Experience Design, Interactive Systems, Virtual Reality.

c. Nanotechnology

- Duration: 1.5-2 years (3-4 semesters)
- Entry Requirements: Bachelor's degree in a related field; proficiency in English.
- Specializations: Nanomaterials, Nanoelectronics, Nanomedicine.

PhD Programs

a. Bio-Med-Chem Doctoral School

- Duration: 3-4 years
- Entry Requirements: Master's degree in a related field; research proposal; proficiency in English.
- Specializations: Interdisciplinary research in biology, medicine, and chemistry.

b. Doctoral School of Exact and Natural Sciences

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- Duration: 3-4 years
- Entry Requirements: Master's degree in a related field; research proposal; proficiency in English.
- Specializations: Physics, Chemistry, Mathematics.

c. Interdisciplinary Doctoral School

- Duration: 3-4 years
- Entry Requirements: Master's degree in a related field; research proposal; proficiency in English.
- Specializations: Tailored to individual research interests.

These programs offer comprehensive education in various STEM fields, preparing students for successful careers in academia, industry, and research.

Current Status of female inclusion in STEM-related study programs (statistics)

The statistical data collected refers to the current state of women's integration in relation to the key objectives set out in the ST3AM report template, where available. According to the data collected, the number of female students starting first-cycle and second-cycle studies varies. In the years 2020-2023, the percentage of female students was lower in first-cycle studies (around 30%) and higher in second-cycle studies (around 42%). The results show that the proportion of women choosing to study STEM subjects remains low. However, women who have already started their education in this area are more likely to continue it in the second cycle. This illustrates the need to continue promoting this educational path among young women, for example, through programs targeting high school students.

The next data collected shows the percentage of females among all students who dropped out of STEM fields in 2020-2023. The percentage of females is lower than that of males, averaging 27% for first-cycle studies and around 40% for second-cycle studies.

However, regarding data on the percentage of females among all graduates in 2020-23 years, the situation is as follows: the percentage of women is lower than that of males at an average of 41% for first-cycle studies, and around 46% for second-cycle studies.

To estimate the scale of dropouts, it was assumed that a dropout was a student removed from the list before obtaining a degree. This person did not return to the same course within 12 months.

Analysis of the collected data indicates that people who interrupted their studies in 2020-2021 are more likely to appear as having dropped out, because, unlike the others included in the statistics, they completed the entire cycle of studies. Drop-outs from 2022-2023 are still in the middle of their studies; we do not have their whole study cycle completed, so the study area contains fewer semesters and fewer drop-outs.

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The results illustrate the need to continue promoting gender equality, especially in areas where female participation remains low. By taking actions such as mentoring young female researchers, training staff, and developing gender-sensitive policies, we can create an educational environment that supports and retains female students in STEM, and helps achieve gender equality goals within and across programs. An important aspect is to create an image of a university that is accessible and offers opportunities for development and education to all students, regardless of gender, culture, or beliefs.

Future Career Opportunities for Graduates

Female STEM graduates from Lodz University of Technology have a wide range of career paths and employment opportunities. Graduates can pursue careers in research institutions or universities, contributing to scientific advancements and teaching the next generation of STEM professionals [16]. Many graduates find employment in various industries, including technology, pharmaceuticals, automotive, and manufacturing. In addition, fields like biomedical engineering and biotechnology offer opportunities in medical device companies, hospitals, and research labs, focusing on developing and improving medical technologies [17]. The Career Office at Lodz University of Technology provides support in finding internships and job placements, offering individual consultations, career counselling, and coaching [17]. Lodz University of Technology promotes development opportunities for graduates—we regularly run promotional campaigns, such as videos featuring successful recent graduates, and we track our graduates' careers and collect statistics. We organize job fairs, training sessions, and workshops on recruitment and career development, and we also offer internships and apprenticeships in business and industry.

6.6.2. Readiness of Gender Equality Plans (GEP) (Project Activity WP2.3)

Contextual background

National Requirements

The principle of equality between women and men is enshrined in the Polish Constitution, the Labor Code, and the Act on Employment Promotion and Labor Market Institutions. Far more precise national provisions on equal treatment and counteracting gender discrimination are found in the Act of June 26, 1974, Labor Code (Journal of Laws of 2014, item 1502, as amended). The Code has a separate chapter devoted to the issue of equal treatment in employment. Higher education legislation makes almost no mention of gender equality. The Act of July 20, 2018 – Law on Higher Education and Science (Law 2.0, Constitution for Science) does not include gender equality as an aim or asset for higher education institutions and research organizations. There is no legislation or policy measures on gender equality in decision-making, career development, harassment and mobbing, or gender sensitivity in research and teaching.

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In Poland, women account for 47% of researchers in higher education and science. The increase in the participation of women in science and engineering is visible, but they are still underrepresented among inventors and leaders of academic institutions. Some organizations support the career development of women in STEM, such as IEEE Women in Engineering, along with communities that bring together women working in technology.

Women's participation in science and research

- Women account for 47% of researchers in the higher education and science sector (HES).
- Between 2013 and 2022, the share of women in category A positions increased from 22% to 28%.
- Between 2018 and 2022, women accounted for an average of 40% of authors of scientific publications in all fields of research and development.
- They remain underrepresented among inventors, a trend consistent with EU data.

Career development and support

- IEEE Women in Engineering: This organization supports women in science and engineering through workshops, mentoring sessions, and networking events. It brings together people who believe in equal opportunities.
- Women in Technology Poland: This is a community focused on IT and new technologies that supports women by offering a space for knowledge exchange and skill development, according to its Facebook page.
- Development support: The activities of IEEE and other organizations aim to support professional and personal development, as well as inspire younger generations to pursue careers in the fields.

Challenges and progress

A positive trend is the increase in women's participation in science and engineering, though this is still a long-term process.

- The ratio of women in management positions in higher education in Poland was lower than the EU-27 average in 2014 and 2022.
- Available data suggest that women's professional careers in STEM fields remain challenging, despite positive changes in the proportions of promotions and women's participation at various academic levels.

Institutional Context

Lodz University of Technology (TUL) received the 2016 HR Excellence in Research award from the European Commission for its adherence to the principles of the European Charter for Researchers and the Code of Conduct for the recruitment of researchers, consequently creating a friendly

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working environment and transparent rules. The award also represents a commitment to, among other things, the continued implementation and ongoing monitoring of gender equality measures. In this regard, Lodz University of Technology (TUL) declares that it will provide a sense of security, understood first and foremost as respect for the principles of equality, acceptance of diversity, and anti-discrimination, to every member of the academic community. Implementation of such a policy will enable everyone to develop personally and academically, free of obstacles.

Current State of GEP at TUL

Public Availability and Transparency

The current GEP TUL Plan is a public document, visible to both employees and the entire academic community. Anyone can read the document and see the composition of the team responsible for its implementation. All information is available in two languages: Polish and English. The GEP Plan includes promotional activities, which are particularly important for spreading awareness about equality issues and sharing achievements.

Scope and Coverage

The current action plan, like the previous one, addresses areas identified by the European Commission as key to achieving gender balance in organizations, i.e., work-life balance and the organizational culture of the institution; gender equality in management and decision-making bodies; gender equality in recruitment and career development; integrating gender issues into research and educational content; measures against gender-based violence, including against sexual harassment. The plan includes 15 actions, each of which falls into one of the following 5 scopes: Organizational culture and work-life balance; Gender equality in leadership, decision-making, research, and education; Gender equality in recruitment and career advancement; Institutional infrastructure; Raising awareness of gender-based violence.

Implementation and Governance

Organizational Structure for GEP Implementation

The Gender Equality Plan was established in 2021. This document was developed by the Team for the Implementation and Monitoring of the Gender Equality Plan at Lodz University of Technology. Strategic coordination of the team is led by Prof. Łukasz Albrecht, Vice-Rector for Science. The team consists of both men and women representing various employee groups, at different career stages, and fulfilling a range of roles. This diversity offers a range of perspectives on gender equality, ensuring that multiple views and experiences are included.

Monitoring and Accountability

The team responsible for implementing the GEP Plan meets once a quarter and monitors the progress of the work. In addition, the equality tab on the university's website is regularly updated, and gender statistics are published.

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Best Practices in GEP Implementation

Best practices

- Mentorship programs: Procedure for periodic development interview of doctoral candidates by their supervisors (part of mid-term evaluation)
- Gender-sensitive recruitment and promotion: Promoting gender balance in admissions to faculties where there is a significant gender imbalance among the students, recommendations for conducting recruitment proceedings: for gender-balanced composition of selection committees, standardized candidate assessment questionnaire and interview script.
- Awareness and Training programs: Regular training on gender equality for all staff groups, doctoral candidates, and students at TUL; Training on anti-mobbing and anti-discrimination topics for individuals in decision-making and leadership roles, other employees, doctoral candidates, and students.
- Flexible work policies and family-friendly initiatives: Examples of actions set out in GEP 2022 - 2024 that were fully implemented include the launch of the Non-Public Preschool of TUL, followed by the Non-Public Child Daycare Center of TUL; the inclusion in the Regulations on Social Support and Benefits of provisions for partial reimbursement of childcare costs for employees provided by a daytime caregiver or nanny.

Gaps, Challenges, and Recommendations

Gaps in GEP Implementation

- **Unaddressed areas:** Reports should be published more frequently. There are no policies for the prevention of Gender Violence, but action on this gap has been taken in the new GEP. The monitoring system is expanded beyond the GEP plan.
- **Resource allocation:** Yes, resources have been secured for implementation - both the financial resources needed to carry out the tasks and personnel resources - the HR department, together with the GEP team, is responsible for monitoring and implementing the framework. The GEP has the backing of the management team, with the Vice Chancellor for Science serving as supervisor.
- **Stakeholder engagement:** The GEP team is diverse in terms of gender, staff group - includes teachers and administration, and scientific seniority - from student representatives, doctoral students, to early and advanced researchers.
- **Improving monitoring and reporting mechanisms:** Reports conducted quarterly are visible to GEP team members, but in addition to a summary of each plan, it would be appropriate to publish partial summaries.

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6.6.3. Consultation Sessions (Project Activity WP2.3)

Key conclusions from the meeting with faculty

Goals - what is the priority of actions to be implemented at the moment?

Respondents indicated that in recent years they have noticed changes in attitudes toward treatment and have become familiar with the activities undertaken at the University under the GEP. However, there are still many aspects of the University's activities related to promoting equal treatment that need to be disseminated. Many activities are offered, but they do not reach everyone involved. Promoting inclusive language and supporting good equality practices in teaching should also be a priority. As such, several actions were identified involving different actors and levels of the institution:

- **Development of training programs -** Management and all employee groups should receive training in gender integration. Teaching staff in particular should receive training in anti-discrimination and inclusive language.
- **Development of personnel policy** - further measures aimed at building work-life balance, facilitating the return of employees to work after parental leave, clear career paths, and transparent recruitment processes.
- **Students** - involving the academic community, including students, to a great extent in planning equality measures undertaken at the university

Cliffs - what problems and situations do women in STEM disciplines face, and what is challenging?

- Social climate and stereotypes influence the assessment of women studying STEM subjects.

- The architecture of facilities should be more inclusive for different groups.

- There is a lack of female role models in STEAM subjects.

- Parenting has a more negative impact on women's scientific careers than on men's. Women indicated that parenting affected their professional development by increasing their family workload and making it more difficult to balance family and professional responsibilities. In addition, maternity leave deprived them of promotion opportunities due to reduced scientific, publishing, and research activity during this period. They said they felt the need to provide additional evidence of competence and take on more responsibility to compensate for taking parental or sick leave.

- The style of communication between academics and students may be considered discriminatory.

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Needs - what is needed to deal with reefs - the most important conclusions

- Lack of female role models in science - lack of visible mentors and role models for women. Organizing meetings with female scientists, publishing success stories of women in science, and highlighting their achievements in textbooks and university social media.

- Promoting programs in which TUL participates, e.g. “Women into Science!” program,

- Developing mentoring,

- Introducing a buddie - a mentor at the early stages of starting studies (preferably another female student familiar with the faculty for newly enrolled girls in college),

- Promoting GEP activities,

- Increase knowledge and sensitivity about gender inequality and its impact on didactics.

Summary of the survey conducted among teachers and female students

An anonymous survey conducted among academic staff and female students shows that gender equality is improving, but there are still visible challenges at the university. Of 34 people, 8 said they do not fully believe that women have equal opportunities in their field. While this is a minority, it still signals that some people feel women are mistreated. A significant concern is that almost every respondent reported seeing or experiencing gender bias, such as being taken less seriously or hearing sexist jokes. This includes 16 professors and 15 students, which shows these experiences are widespread, even among senior staff. Another issue is a lack of awareness: 12 people said they don’t know about the university's anti-discrimination services. This suggests the services may not be promoted clearly enough or may not feel relevant or safe for many users. On a positive note, there is real interest in change. 12 participants said they are willing to take part in support programs like mentoring, workshops, or networking. Many others answered, “not sure,” which suggests openness, even if they haven’t joined anything yet.

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15. https://p.lodz.pl/en/about-tul/news/role-and-impact-women-science
16. ST3AM Project: Advancing Women in Science and Technology
17. Biuro Karier - Politechnika Łódzka

APPENDICES

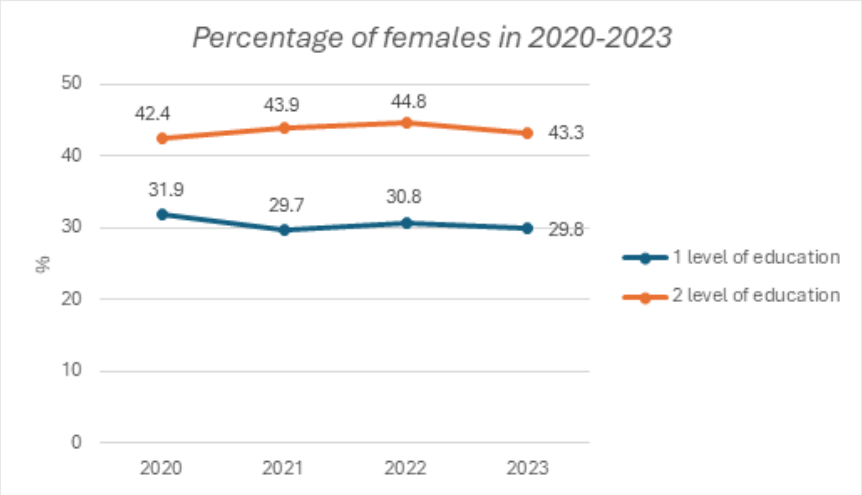

FIGURE 25. POLITECHNIKA ŁÓDZKA - FEMALE PERCENTAGE OF ADMISSION IN STEM (2020-2023)

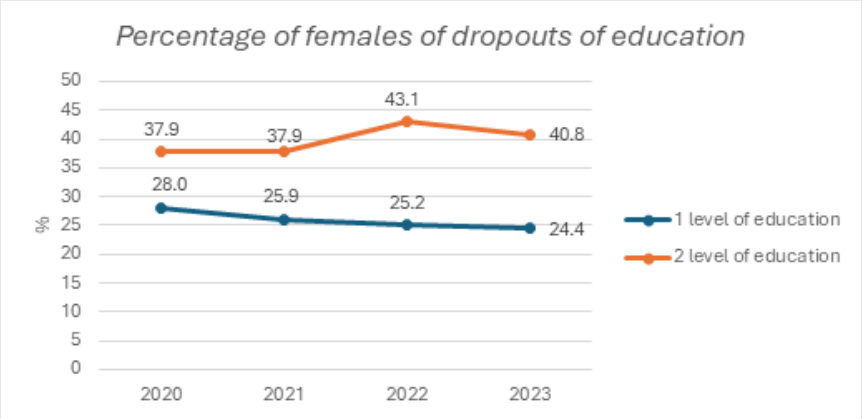

FIGURE 26. POLITECHNIKA ŁÓDZKA - PERCENTAGE OF FEMALES DROPOUTS (2020-2023)

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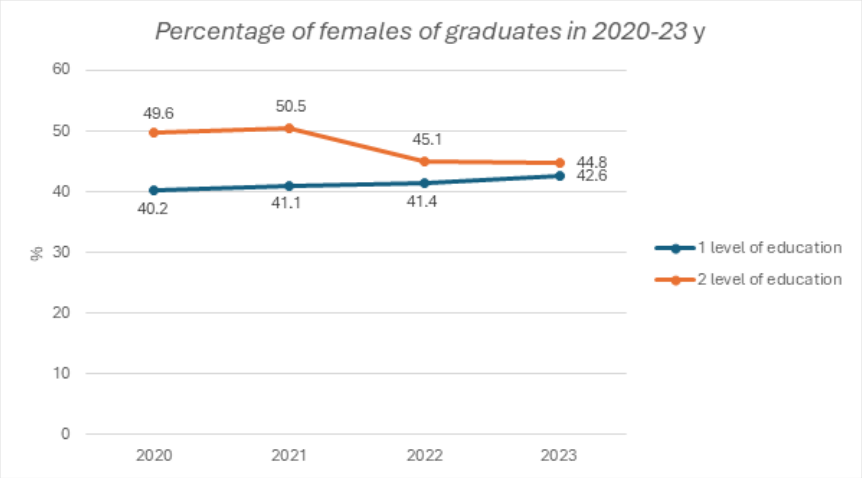

FIGURE 27. POLITECHNIKA ŁÓDZKA - PERCENTAGE OF FEMALE GRADUATES IN STEM(2020-2023)

TABLE 33. POLITECHNIKA ŁÓDZKA - INTERNATIONAL MOBILITIES (2024)

Total and share of women being **APPLICANT**, **RECIPIENT** or **PARTICIPANT** for **international mobilities**
(share of male and female), 2024 YEAR

Fields of study				6 F	6 Total	7 F	7 Total	8 F	8 Total	Total F	Total
Broad field		Narrow field									
05	Natural sciences, mathematics and statistics	051	Biological and related sciences	0	0	0	0	0	0	0	0
		052	Environment	0	0	0	0	0	0	0	0
		053	Physical sciences	1	1	0	1	0	0	1	2
		054	Mathematics and statistics	0	0	0	0	0	0	0	0
06	Information and communication technologies	061	Information and Communication Technologies (ICTs)	14	61	3	7	0	0	17	68
		068	0688: Information and Communication Technologies (ICTs), inter-disciplinary programmes	0	0	0	0	0	0	0	0
07	Engineering, manufacturing and construction	071	Engineering and engineering trades	25	68	4	9	0	0	29	77
		072	Manufacturing and processing	3	4	0	0	0	0	3	4
		073	Architecture and construction	32	44	1	1	0	0	33	45
		078	Engineering, manufacturing and construction, inter-disciplinary programmes	0	0	0	0	0	0	0	0
	Not known or specify										
	Total: all mobility of all disciplines included			108	220	20	32				

TABLE 34. POLITECHNIKA ŁÓDZKA - ADMISSIONS IN STEM PER GENDER (2023)

*Number of **admission students** by level of education and detailed STEM field (share of male and female admissions), 2023 YEAR*

Fields of study				6 Total	6 F	7 Total	7 F	8 Total	8 F	Total	Total F
Broad field		Narrow field									
05	Natural sciences, mathematics and statistics	051	Biological and related sciences								
		052	Environment								
		053	Physical sciences	106	55	58	31	14	2	178	88
		054	Mathematics and statistics	152	69	27	11	3	0	182	80
06	Information and communication technologies	061	Information and Communication Technologies (ICTs)	269	60	103	25	8	1	380	86
		068	0688: Information and Communication Technologies (ICTs), inter-disciplinary programmes	328	24	118	23			446	47
07	Engineering, manufacturing and construction	071	Engineering and engineering trades	1,271	294	404	154	16	4	1,691	452
		072	Manufacturing and processing	100	56	95	74	1	1	196	131
		073	Architecture and construction	336	187	132	86	5	2	473	275
		078	Engineering, manufacturing and construction, inter-disciplinary programmes	155	66	16	9			171	75
	Not known or specify										
			Total: all fields of education	2,717	811	953	413	47	10	3,717	1,234

TABLE 35. POLITECHNIKA ŁÓDZKA - GRADUATES IN STEM PER GENDER (2023)

Total number of **graduates** per field of study *(share of male and female graduation), 2023 YEAR*

Fields of study				6 Total	6 F	7 Total	7 F	8 Total	8 F	Total	Total F
Broad field		Narrow field									
05	Natural sciences, mathematics and statistics	051	Biological and related sciences					15	13	15	13
		052	Environment							0	0
		053	Physical sciences	36	22	27	21	21	13	84	56
		054	Mathematics and statistics	43	23	21	10	2	0	66	33
06	Information and communication technologies	061	Information and Communication Technologies (ICTs)	14	2	62	13	6	0	82	15
		068	0688: Information and Communication Technologies (ICTs), inter-disciplinary programmes	120	11	80	13			200	24
07	Engineering, manufacturing and construction	071	Engineering and engineering trades	510	180	335	117	54	16	899	313
		072	Manufacturing and processing	28	22	66	62	17	11		95
		073	Architecture and construction	204	124	120	81	14	5	338	210
		078	Engineering, manufacturing and construction, inter-disciplinary programmes	130	78	5	4			135	82
	Not known or specify			1,085	462	716	321	129	58	1,819	841
			Total: all fields of education								

TABLE 36. POLITECHNIKA ŁÓDZKA - DROPOUTS IN STEM PER GENDER (2023)

Total number of **dropouts** per field of study
(share of male and female dropouts), 2023 YEAR

Fields of study				6 Total	6 F	7 Total	7 F	8 Total	8 F	Total	Total F
Broad field		Narrow field									
05	Natural sciences, mathematics and statistics	051	Biological and related sciences								
		052	Environment								
		053	Physical sciences	38	24	28	13	2	0	68	37
		054	Mathematics and statistics	55	26	15	6	0	0	70	32
06	Information and communication technologies	061	Information and Communication Technologies (ICTs)	50	14	18	4	1	0	69	18
		068	0688: Information and Communication Technologies (ICTs), inter-disciplinary programmes	115	7	41	9			156	16
07	Engineering, manufacturing and construction	071	Engineering and engineering trades	488	82	145	54	1	1	634	137
		072	Manufacturing and processing	36	16	47	34	0	0	83	50
		073	Architecture and construction	85	39	24	15	0	0	109	54
		078	Engineering, manufacturing and construction, inter-disciplinary programmes	50	16	9	6			59	22
	Not known or specify										
			Total: all fields of education	917	224	327	141	4	1	1,248	366

TABLE 37. POLITECHNIKA ŁÓDZKA - GRADUATES IN THE FIRST YEAR IN STEM PER GENDER (2023)

Graduations in the first year
(how many women continue after the first year of study - indicate share of male and female continuous studies), 2023 YEAR

Fields of study				6 Total	6 F	7 Total	7 F	8 Total	8 F	Total	Total F
Broad field		Narrow field									
05	Natural sciences, mathematics and statistics	051	Biological and related sciences								
		052	Environment								
		053	Physical sciences	73	32	30	18	12	2	115	52
		054	Mathematics and statistics	100	44	12	5	3	0	115	49
06	Information and communication technologies	061	Information and Communication Technologies (ICTs)	221	47	87	21	7	1	315	69
		068	0688: Information and Communication Technologies (ICTs), inter-disciplinary programmes	221	18	77	14			298	32
07	Engineering, manufacturing and construction	071	Engineering and engineering trades	816	221	261	101	15	3	1,092	325
		072	Manufacturing and processing	67	43	48	40	1	1	116	84
		073	Architecture and construction	260	150	110	72	5	2	375	224
		078	Engineering, manufacturing and construction, inter-disciplinary programmes	109	51	7	3			116	54
	Not known or specify										
			Total: all fields of education	1,867	606	632	274	43	9	2,542	889

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TABLE 38. POLITECHNIKA ŁÓDZKA - INTERNATIONAL MOBILITIES (2023)

Total and share of women being **APPLICANT**, **RECIPIENT** or **PARTICIPANT** for **international mobilities**
(share of male and female), 2023 YEAR

Fields of study				6 F	6 Total	7 F	7 Total	8 F	8 Total	Total F	Total
Broad field		Narrow field									
05	Natural sciences, mathematics and statistics	051	Biological and related sciences	1	2	0	0	0	0	1	2
		052	Environment	0	0	0	0	0	0	0	0
		053	Physical sciences	1	1	3	4	0	0	4	5
		054	Mathematics and statistics	0	2	0	1	0	0	0	3
06	Information and communication technologies	061	Information and Communication Technologies (ICTs)	13	39	3	5	0	0	16	44
		068	0688: Information and Communication Technologies (ICTs), inter-disciplinary programmes	0	0	0	0	0	0	0	0
07	Engineering, manufacturing and construction	071	Engineering and engineering trades	36	68	10	14	0	0	46	82
		072	Manufacturing and processing	3	3	0	0	0	0	3	3
		073	Architecture and construction	19	26	17	18	0	0	36	44
		078	Engineering, manufacturing and construction, inter-disciplinary programmes	4	8	1	1	0	0	5	9
	Not known or specify										
	Total: all mobility of all disciplines included			105	195	40	52	0	0		

TABLE 39. POLITECHNIKA ŁÓDZKA - GRADUATES IN THE FIRST YEAR IN STEM PER GENDER (2022)

Graduations in the first year
(how many women continue after the first year of study - indicate share of male and female continuous studies), 2022 YEAR

Fields of study				6 Total	6 F	7 Total	7 F	8 Total	8 F	Total	Total F
Broad field		Narrow field									
)5	Natural sciences, mathematics and statistics	051	Biological and related sciences								
		052	Environment								
		053	Physical sciences	78	40	29	21	21	16	128	77
		054	Mathematics and statistics	105	63	12	3	1	0	118	66
)6	Information and communication technologies	061	Information and Communication Technologies (ICTs)	206	37	80	23	9	3	295	63
		068	0688: Information and Communication Technologies (ICTs), inter-disciplinary programmes	181	27	92	19			273	46
)7	Engineering, manufacturing and construction	071	Engineering and engineering trades	787	202	387	154	35	14	1,209	370
		072	Manufacturing and processing	42	28	70	59	4	2	116	89
		073	Architecture and construction	254	151	112	76	3	2	369	229
		078	Engineering, manufacturing and construction, inter-disciplinary programmes	108	58	9	9			117	67
	Not known or specify										
	Total: all fields of education			1,761	606	791	364	73	37	2,625	1,007

TABLE 40. POLITECHNIKA ŁÓDZKA - ADMISSIONS IN STEM PER GENDER (2022)

*Number of **admission students** by level of education and detailed STEM field (indicate share of male and female admissions), 2022 YEAR*

Fields of study											
Broad field		Narrow field		6 Total	6 F	7 Total	7 F	8 Total	8 F	Total	Total F
05	Natural sciences, mathematics and statistics	051	Biological and related sciences								
		052	Environment								
		053	Physical sciences	106	51	53	38	23	17	182	106
		054	Mathematics and statistics	146	83	20	5	2	0	168	88
06	Information and communication technologies	061	Information and Communication Technologies (ICTs)	238	45	104	29	11	3	353	77
		068	0688: Information and Communication Technologies (ICTs), inter-disciplinary programmes	272	35	139	24			411	59
07	Engineering, manufacturing and construction	071	Engineering and engineering trades	1,275	265	581	235	43	14	1,899	514
		072	Manufacturing and processing	78	41	100	82	4	2	182	125
		073	Architecture and construction	297	171	126	83	4	2	427	256
		078	Engineering, manufacturing and construction, inter-disciplinary programmes	237	124	16	14			253	138
	Not known or specify										
			Total: all fields of education	2,649	815	1,139	510	87	38	3,875	1,363

TABLE 41. POLITECHNIKA ŁÓDZKA - GRADUATES IN STEM PER GENDER (2022)

Total number of **graduates** per field of study *(indicate share of male and female graduation), 2022 YEAR*

Fields of study											
Broad field		Narrow field		6 Total	6 F	7 Total	7 F	8 Total	8 F	Total	Total F
05	Natural sciences, mathematics and statistics	051	Biological and related sciences					4	3	4	3
		052	Environment								
		053	Physical sciences	35	25	32	24	10	3	77	52
		054	Mathematics and statistics	30	18	18	12	1	1	49	31
06	Information and communication technologies	061	Information and Communication Technologies (ICTs)	181	43	68	11	1	0	250	54
		068	0688: Information and Communication Technologies (ICTs), inter-disciplinary programmes	125	17	90	12			215	29
07	Engineering, manufacturing and construction	071	Engineering and engineering trades	647	228	364	139	27	11	1,038	378
		072	Manufacturing and processing	39	34	67	64	12	5	118	103
		073	Architecture and construction	183	123	124	79	4	1	311	203
		078	Engineering, manufacturing and construction, inter-disciplinary programmes	131	79	16	10			147	89
	Not known or specify										
			Total: all fields of education	1,371	567	779	351	59	24	2,209	942

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TABLE 42. POLITECHNIKA ŁÓDZKA - DROPOUTS IN STEM PER GENDER (2022)

Total number of **dropouts** per field of study
(indicate share of male and female dropouts), 2022 YEAR

Fields of study											
Broad field		Narrow field		6 Total	6 F	7 Total	7 F	8 Total	8 F	Total	Total F
05	Natural sciences, mathematics and statistics	051	Biological and related sciences								
		052	Environment								
		053	Physical sciences	38	17	24	17	4	2	66	36
		054	Mathematics and statistics	49	25	11	2	1	0	61	27
06	Information and communication technologies	061	Information and Communication Technologies (ICTs)	48	11	26	8	3	0	77	19
		068	0688: Information and Communication Technologies (ICTs), inter-disciplinary programmes	107	9	53	5			160	14
07	Engineering, manufacturing and construction	071	Engineering and engineering trades	551	78	212	87	11	0	774	165
		072	Manufacturing and processing	40	17	32	24	0	0	72	41
		073	Architecture and construction	58	28	15	7	1	0	74	35
		078	Engineering, manufacturing and construction, inter-disciplinary programmes	142	75	7	5			149	80
	Not known or specify										
			Total: all fields of education	1,033	260	380	155	20	2	1,433	417

TABLE 43. POLITECHNIKA ŁÓDZKA - INTERNATIONAL MOBILITIES (2022)

Total and share of women being **APPLICANT, RECIPIENT** or **PARTICIPANT** for **international mobilities**
(share of male and female), 2022 YEAR

Fields of study											
Broad field		Narrow field		6 F	6 Total	7 F	7 Total	8 F	8 Total	Total F	Total
05	Natural sciences, mathematics and statistics	051	Biological and related sciences	0	0	0	1			0	1
		052	Environment	0	0	0	0			0	0
		053	Physical sciences	1	1	0	0			1	1
		054	Mathematics and statistics	0	0	0	0			0	0
06	Information and communication technologies	061	Information and Communication Technologies (ICTs)	6	35	1	1			7	36
		068	0688: Information and Communication Technologies (ICTs), inter-disciplinary programmes	0	0	0	0			0	0
07	Engineering, manufacturing and construction	071	Engineering and engineering trades	35	81	7	17			42	98
		072	Manufacturing and processing	0	0	1	1			1	1
		073	Architecture and construction	20	22	10	12			30	34
		078	Engineering, manufacturing and construction, inter-disciplinary programmes	4	5	0	0			4	5
	Not known or specify									0	0
			Total: all mobility of all disciplines included	90	179	27	44			117	223

TABLE 44. POLITECHNIKA ŁÓDZKA - ADMISSIONS IN STEM PER GENDER (2021)

*Number of **admission students** by level of education and detailed STEM field (share of male and female admissions), 2021 YEAR*

Fields of study											
Broad field		Narrow field		6 Total	6 F	7 Total	7 F	8 Total	8 F	Total	Total F
05	Natural sciences, mathematics and statistics	051	Biological and related sciences								
		052	Environment								
		053	Physical sciences	128	72	56	40	24	14	208	126
		054	Mathematics and statistics	83	43	46	23	2	2	131	68
06	Information and communication technologies	061	Information and Communication Technologies (ICTs)	245	35	102	19	8	1	355	55
		068	0688: Information and Communication Technologies (ICTs), inter-disciplinary programmes	327	42	153	31			480	73
07	Engineering, manufacturing and construction	071	Engineering and engineering trades	1,419	327	606	224	22	4	2,047	555
		072	Manufacturing and processing	86	36	127	102	4	2	217	140
		073	Architecture and construction	368	178	151	101	5	1	524	280
		078	Engineering, manufacturing and construction, inter-disciplinary programmes	234	126	21	14			255	140
	Not known or specify										
			Total: all fields of education	2,890	859	1,262	554	65	24	4,217	1,437

TABLE 45. POLITECHNIKA ŁÓDZKA - GRADUATES IN THE FIRST YEAR IN STEM PER GENDER (2021)

Graduations in the first year

(how many women continue after the first year of study - male and female continuous studies), 2021 YEAR

Fields of study											
Broad field		Narrow field		6 Total	6 F	7 Total	7 F	8 Total	8 F	Total	Total F
05	Natural sciences, mathematics and statistics	051	Biological and related sciences								
		052	Environment								
		053	Physical sciences	96	57	41	32	21	12	158	101
		054	Mathematics and statistics	51	26	27	14	2	2	80	42
06	Information and communication technologies	061	Information and Communication Technologies (ICTs)	207	32	72	12	7	1	286	45
		068	0688: Information and Communication Technologies (ICTs), inter-disciplinary programmes	199	25	123	25			322	50
07	Engineering, manufacturing and construction	071	Engineering and engineering trades	852	226	425	163	21	4	1,298	393
		072	Manufacturing and processing	51	25	104	91	4	2	159	118
		073	Architecture and construction	260	144	137	91	4	1	401	236
		078	Engineering, manufacturing and construction, inter-disciplinary programmes	125	64	13	7			138	71
	Not known or specify										
			Total: all fields of education	1,841	599	942	435	59	22	2,842	1,056

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TABLE 46. POLITECHNIKA ŁÓDZKA - GRADUATES IN THE FIRST YEAR IN STEM PER GENDER (2021)

Total number of **graduates** per field of study
(share of male and female graduation), 2021 YEAR

Fields of study											
Broad field		Narrow field		6 Total	6 F	7 Total	7 F	8 Total	8 F	Total	Total F
05	Natural sciences, mathematics and statistics	051	Biological and related sciences					8	5	8	5
		052	Environment								
		053	Physical sciences	54	41	25	19	5	3	84	63
		054	Mathematics and statistics	53	33	33	21	1	0	87	54
06	Information and communication technologies	061	Information and Communication Technologies (ICTs)	196	34	81	14	0	0	277	48
		068	0688: Information and Communication Technologies (ICTs), inter-disciplinary programmes	175	25	87	12			262	37
07	Engineering, manufacturing and construction	071	Engineering and engineering trades	830	307	496	246	22	8	1,348	561
		072	Manufacturing and processing	70	56	68	63	9	5	147	124
		073	Architecture and construction	197	128	130	86	6	1	333	215
		078	Engineering, manufacturing and construction, inter-disciplinary programmes	100	64	16	12			116	76
	Not known or specify										
			Total: all fields of education	1675	688	936	473	51	22	2662	1183

TABLE 47. POLITECHNIKA ŁÓDZKA - DROPOUTS IN STEM PER GENDER (2021)

Total number of **dropouts** per field of study
(share of male and female dropouts), 2021 YEAR

Fields of study											
Broad field		Narrow field		6 Total	6 F	7 Total	7 F	8 Total	8 F	Total	Total F
05	Natural sciences, mathematics and statistics	051	Biological and related sciences								
		052	Environment								
		053	Physical sciences	49	23	17	9	4	2	70	34
		054	Mathematics and statistics	0	20	21	10	0	0	21	30
06	Information and communication technologies	061	Information and Communication Technologies (ICTs)	56	6	34	7	3	0	93	13
		068	0688: Information and Communication Technologies (ICTs), inter-disciplinary programmes	150	21	41	8			191	29
07	Engineering, manufacturing and construction	071	Engineering and engineering trades	697	124	212	73	3	0	912	197
		072	Manufacturing and processing	45	16	31	19	0	0	76	35
		073	Architecture and construction	146	49	24	14	1	0	171	63
		078	Engineering, manufacturing and construction, inter-disciplinary programmes	121	68	8	7			129	75
	Not known or specify										
			Total: all fields of education	1,264	327	388	147	11	2	1,663	476

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TABLE 48. POLITECHNIKA ŁÓDZKA - INTERNATIONAL MOBILITIES (2021)

Total and share of women being **APPLICANT**, **RECIPIENT** or **PARTICIPANT** for **international mobilities**
(share of male and female), 2021 YEAR

Fields of study				6 F	6 Total	7 F	7 Total	8 F	8 Total	Total F	Total
Broad field		Narrow field									
05	Natural sciences, mathematics and statistics	051	Biological and related sciences	1	1	0	0			1	1
		052	Environment	0	0	0	0			0	0
		053	Physical sciences	0	0	0	1			0	1
		054	Mathematics and statistics	0	0	0	0			0	0
06	Information and communication technologies	061	Information and Communication Technologies (ICTs)	7	26	3	8			10	34
		068	0688: Information and Communication Technologies (ICTs), inter-disciplinary programmes	0	0	0	0			0	0
07	Engineering, manufacturing and construction	071	Engineering and engineering trades	32	68	3	14			35	82
		072	Manufacturing and processing	1	2	4	4			5	6
		073	Architecture and construction	26	36	1	1			27	37
		078	Engineering, manufacturing and construction, inter-disciplinary programmes	4	11	0	0			4	11
	Not known or specify									0	0
	Total: all mobility of all disciplines included			96	177	20	38			116	215

TABLE 49. POLITECHNIKA ŁÓDZKA - ADMISSIONS IN STEM PER GENDER (2020)

*Number of **admission students** by level of education and detailed STEM field (share of male and female admissions), 2020 YEAR*

Fields of study				6 Total	6 F	7 Total	7 F	8 Total	8 F	Total	Total F
Broad field		Narrow field									
05	Natural sciences, mathematics and statistics	051	Biological and related sciences								
		052	Environment								
		053	Physical sciences	119	65	66	45	41	25	226	135
		054	Mathematics and statistics	96	49	29	14	0	0	125	63
06	Information and communication technologies	061	Information and Communication Technologies (ICTs)	248	40	103	15	14	6	365	61
		068	0688: Information and Communication Technologies (ICTs), inter-disciplinary programmes	259	38	183	29			442	67
07	Engineering, manufacturing and construction	071	Engineering and engineering trades	1,587	400	773	311	62	29	2,422	740
		072	Manufacturing and processing	108	52	118	94	7	5	233	151
		073	Architecture and construction	407	203	149	90	11	5	567	298
		078	Engineering, manufacturing and construction, inter-disciplinary programmes	236	128	13	10			249	138
	Total: all fields of education			3,060	975	1,434	608	135	70	4,629	1,653

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TABLE 50. POLITECHNIKA ŁÓDZKA - GRADUATES IN THE FIRST YEAR IN STEM PER GENDER (2020)

Graduations in the first year
(how many women continue after the first year of study - share of male and female continuous studies), 2020 YEAR

Fields of study				6 Total	6 F	7 Total	7 F	8 Total	8 F	Total	Total F
Broad field		Narrow field									
	Natural sciences, mathematics and statistics	051	Biological and related sciences								
		052	Environment								
		053	Physical sciences	79	47	28	23	36	21	143	91
		054	Mathematics and statistics	67	38	20	11	0	0	87	49
	Information and communication technologies	061	Information and Communication Technologies (ICTs)	197	28	70	7	12	6	279	41
		068	0688: Information and Communication Technologies (ICTs), inter-disciplinary programmes	176	23	111	22			287	45
	Engineering, manufacturing and construction	071	Engineering and engineering trades	993	265	525	218	53	28	1,571	511
		072	Manufacturing and processing	55	23	76	67	7	5	138	95
		073	Architecture and construction	304	170	126	77	9	5	439	252
		078	Engineering, manufacturing and construction, inter-disciplinary programmes	140	82	10	7			150	89
	Total: all fields of education			2,011	676	966	432	117	65	3,094	1,173

TABLE 51. POLITECHNIKA ŁÓDZKA - GRADUATES IN THE FIRST YEAR IN STEM PER GENDER (2020)

Total number of **graduates** per field of study
(share of male and female graduation), 2020 YEAR

Fields of study				6 Total	6 F	7 Total	7 F	8 Total	8 F	Total	Total F
Broad field		Narrow field									
	Natural sciences, mathematics and statistics	051	Biological and related sciences								
		052	Environment								
		053	Physical sciences	57	42	40	29	8	5	105	76
		054	Mathematics and statistics	49	29	26	16	4	1	79	46
	Information and communication technologies	061	Information and Communication Technologies (ICTs)	177	33	71	13	2	0	250	46
		068	0688: Information and Communication Technologies (ICTs), inter-disciplinary programmes	158	23	76	13			234	36
	Engineering, manufacturing and construction	071	Engineering and engineering trades	839	299	538	231	12	3	1,389	533
		072	Manufacturing and processing	83	57	91	80	5	5	179	142
		073	Architecture and construction	204	121	143	105	3	2	350	228
		078	Engineering, manufacturing and construction, inter-disciplinary programmes	150	86	12	8			162	94
	Not known or specify										
	Total: all fields of education			1717	690	997	495	34	16	2748	1201

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TABLE 52. POLITECHNIKA ŁÓDZKA - DROPOUTS IN STEM PER GENDER (2020)

Total number of **dropouts** per field of study
(share of male and female dropouts), 2020 YEAR

Fields of study											
	Broad field		Narrow field	6 Total	6 F	7 Total	7 F	8 Total	8 F	Total	Total F
05	Natural sciences, mathematics and statistics	051	Biological and related sciences								
		052	Environment								
		053	Physical sciences	54	25	42	26	11	9	107	60
		054	Mathematics and statistics	48	22	10	3	0	0	58	25
06	Information and communication technologies	061	Information and Communication Technologies (ICTs)	86	15	43	8	6	0	135	23
		068	0688: Information and Communication Technologies (ICTs), inter-disciplinary programmes	116	20	90	10			206	30
07	Engineering, manufacturing and construction	071	Engineering and engineering trades	793	170	301	117	23	3	1,117	290
		072	Manufacturing and processing	73	38	45	29	2	0	120	67
		073	Architecture and construction	176	61	36	20	4	1	216	82
		078	Engineering, manufacturing and construction, inter-disciplinary programmes	116	58	3	3			119	61
	Total: all fields of education			1,462	409	570	216	46	13	2,078	638

TABLE 53. POLITECHNIKA ŁÓDZKA - INTERNATIONAL MOBILITIES (2020)

Total and share of women being **APPLICANT**, **RECIPIENT** or **PARTICIPANT** for **international mobilities**
(share of male and female), 2020 YEAR

Fields of study											
	Broad field		Narrow field	6 F	6 Total	7 F	7 Total	8 F	8 Total	Total F	Total
05	Natural sciences, mathematics and statistics	051	Biological and related sciences	0	0	0	0	0	0	0	0
		052	Environment	0	0	0	0	0	0	0	0
		053	Physical sciences	0	1	0	0	0	0	0	1
		054	Mathematics and statistics	0	0	0	0	0	0	0	0
06	Information and communication technologies	061	Information and Communication Technologies (ICTs)	9	34	5	5	0	0	14	39
		068	0688: Information and Communication Technologies (ICTs), inter-disciplinary programmes	3	14	0	0	0	0	3	14
07	Engineering, manufacturing and construction	071	Engineering and engineering trades	41	72	10	15	0	0	51	87
		072	Manufacturing and processing	0	1	3	3	0	0	3	4
		073	Architecture and construction	13	18	0	1	0	0	13	19
		078	Engineering, manufacturing and construction, inter-disciplinary programmes	7	13	0	0	0	0	7	13
	Not known or specify									0	0
	Total: all mobility of all disciplines included			79	163	21	30			100	193

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