

**EDUCATIONAL PROGRAMS IN ENGINEERING: A PERSPECTIVE FROM THE  
NEW MEXICAN SCHOOL AND GENDER EQUITY**

**PROGRAMAS EDUCACIONAIS EM ENGENHARIAS: UMA PERSPECTIVA DA  
NOVA ESCOLA MEXICANA E DA EQUIDADE DE GÊNERO**

**PROGRAMAS EDUCATIVOS EN INGENIERÍAS: UNA PERSPECTIVA DE LA  
NUEVA ESCUELA MEXICANA Y LA EQUIDAD DE GÉNERO**

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**ABSTRACT**

Currently, stereotypes associated with professional practice persist, particularly in engineering programs. This study employs a qualitative approach, using action research, to analyze the issues related to gender equity at the Faculty of Engineering of the Autonomous University of Campeche (UACAM). The study incorporates an analysis of the guiding principles of the New Mexican School (NEM) and the UACAM university statutes to identify, design, and implement strategies, activities, and events aimed at achieving gender equity. This is accomplished through the achievement of the objectives of the Women Engineers project, maintaining a comprehensive and holistic perspective of academic training. The results show that the actions undertaken have been supported by various stakeholders, and the specific objectives have been achieved through alignment with NEM's priority principles. These priorities include university guidelines, infrastructure, financial support, and shared responsibility in student and faculty support initiatives for professional development.

**Keywords:** Engineering. Gender Equality. New Mexican School. Sustainable Development Goals.

**RESUMO**

Na atualidade, persistem estereótipos associados ao exercício profissional, particularmente nos programas educativos vinculados às engenharias. O presente estudo desenvolve uma pesquisa de abordagem qualitativa, na modalidade de pesquisa-ação, que analisa a problemática relacionada à equidade de gênero na Faculdade de Engenharia da

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Universidade Autônoma de Campeche (UACAM). O desenvolvimento do estudo incorpora uma análise dos eixos norteadores da Nova Escola Mexicana (NEM) e dos estatutos universitários da UACAM, com o propósito de identificar, desenhar e implementar estratégias, atividades e eventos orientados à equidade de gênero, por meio do cumprimento dos objetivos do projeto Mulheres Engenheiras, mantendo uma perspectiva integral e holística da formação acadêmica. Os resultados obtidos evidenciam que as ações empreendidas contaram com o apoio de diferentes atores envolvidos, alcançando-se os objetivos específicos propostos mediante articulação com os eixos prioritários da NEM, entre os quais se destacam as diretrizes universitárias, a infraestrutura e o apoio financeiro, bem como a corresponsabilidade em iniciativas de acompanhamento estudantil e para o fortalecimento da formação profissional.

**Palavras-chave:** Engenharias. Equidade de Gênero. Nova Escola Mexicana. Objetivos de Desenvolvimento Sustentável.

## RESUMEN

En la actualidad, persisten estereotipos asociados al ejercicio profesional, particularmente en los programas educativos vinculados con las ingenierías. El presente estudio desarrolla una investigación de enfoque cualitativo, bajo la modalidad de investigación-acción, que analiza la problemática relacionada con la equidad de género en la Facultad de Ingeniería de la Universidad Autónoma de Campeche (UACAM). El desarrollo del estudio incorpora un análisis de los ejes rectores de la nueva escuela mexicana (NEM) y de los estatutos universitarios de la UACAM con el propósito de identificar, diseñar e implementar estrategias, actividades y eventos orientados a la equidad de género, mediante el logro de los objetivos del proyecto Mujeres Ingenieras, manteniendo una perspectiva integral y holística de la formación académica. Los resultados obtenidos evidencian que las acciones emprendidas han contado con el respaldo de distintos actores involucrados, alcanzándose los objetivos específicos planteados mediante la articulación con los ejes prioritarios de la NEM, entre los que destacan los lineamientos universitarios, la infraestructura y el apoyo financiero, así como la corresponsabilidad en iniciativas de acompañamiento estudiantil y por establecimiento a la formación profesional.

**Palabras clave:** Ingenierías. Equidad de Género. Nueva Escuela Mexicana. Objetivos de Desarrollo Sostenible.



## 1 INTRODUCTION

From a historical and educational perspective, it is recognized that education has been central to the advancement of equality. As Pacheco Pazos (2025) puts it, "education has had a central place within feminism" because it is considered that equal access to education for women and men could eliminate misogyny, the devaluation of women and contribute to eliminating other inequalities.

The New Mexican School (NEM) is a national educational project that promotes principles such as inclusion, equity and comprehensive education. Various studies indicate that gender equity is a key pillar in this model: "inclusive and equitable education" is sought through programs that address equality and gender violence, strengthening mutual respect and peaceful coexistence. Although the NEM was initially designed for basic and upper secondary levels, experts highlight that "its escalation to the higher level is imminent", which poses new challenges for universities (Villarruel Fuentes & Villarruel López, 2023). In this context, higher education institutions are expected to adopt their articulating axes – such as education for all, and environments of healthy coexistence – in their academic plans and activities.

Gender equity in education seeks to ensure that all people, regardless of their sex or identity, have equal opportunities, access, and treatment in educational spaces (Virgen Amparo, 2024). At the higher level, this implies institutional and cultural actions to correct historical inequalities and prevent gender-based violence (Solís Salazar et al., 2025).

Many universities collect data on gender participation and retention. Reports from international organizations show that, although in 2022 there was a 21% increase in gender equality indicators in universities, "significant disparities persist" in STEM areas and senior academic positions (IESALC, 2025).

Recent studies in Mexico show that public universities in the southeast —the region where Campeche is located—have made progress in gender equity, but they have yet to institutionalize the gender perspective in policies, programs, and curricula (Echeverría Echeverría, 2024, p. 59). This lag is related to "the persistence of stereotypes, prejudices, and discrimination against women in the university" (Barrera Machado & Duque Monsalve, 2025). This research underscores that progress depends on the existence of internal units dedicated to equality, as well as on the active participation of the academic community in awareness-raising and prevention actions (López Estrada et al., 2023).

The NEM emphasizes a humanistic and community-based educational model. A recent analysis notes that NEM is oriented towards a "model focused on human development, critical and reflective" that links the curriculum with local communities, critical pedagogy and environmental education. This involves preparing university students to act with social justice and environmental awareness, and promoting plural academic spaces. In practice, the NEM proposes priority axes such as guaranteeing education for all and decent environments for coexistence. At the higher level, this involves adapting curricula and institutional culture to reinforce social inclusion, interculturality and comprehensive training.

In addition, the inclusion of gender equity content within the curricula – aligned with the principles of the NEM – makes it possible to strengthen social awareness in students and teachers (Virgen Amparo, 2024). The SEP (2022) emphasizes that the NEM aims to develop a citizenship that respects diversity, equality, and human rights, and that universities are key spaces for materializing these objectives.

These concrete actions materialize the link between the NEM and higher education: the comprehensive training of professionals who understand social diversity, co-responsibility, and educational justice (Solís Salazar et al., 2025). In this sense, the UACAM represents a regional example of how Mexican universities incorporate the axes of the New Mexican School into their institutional culture.

## 2 METHODOLOGY

The study proposes a qualitative research with a *Research-Action* approach applying actions related to gender equity based on the axes of the New Mexican School (NEM) based on the Mission, Vision, Transversal Principle of Gender Perspective and inclusion of the UACAM. Specifically, the Project with code 11/UACAM/2024 Women Engineers is considered as a means or instrument for action. Table 1 shows the approach of the research study.

**Table 1**

*Research-Action Methodology*

<b>RESEARCH</b>	<b>ACTION</b>
Priority axes of action of the New Mexican School (NEM)	Impact of the priority axes of the NEM at the Autonomous University of Campeche and with the Women Engineers Project as an initiative in favor of gender equity.

Source: The source.

## 2.1 RESEARCH

In the research stage, the four principles of the New Mexican School (NEM) are highlighted: revaluation of the teaching profession, Infrastructure, Governance and Content (see Figure 1).

**Figure 1**

*Principles of the New Mexican School (NEM)*

L a Nueva Escuela Mexicana (NEM) en acción			
<b>Revalorización del magisterio</b> Reconocer a las maestras y los maestros como agentes fundamentales del proceso educativo, con pleno respeto a sus derechos, a partir de su desarrollo profesional, mejora continua y vocación de servicio.	<b>Infraestructura</b> Garantizar que los planteles cuenten con servicios e infraestructura necesaria para promover el aprendizaje del estudiantado, en un espacio seguro y que permita la realización de actividades no solo académicas sino deportivas, artísticas y culturales.	<b>Gobernanza</b> Los integrantes de la comunidad escolar y social participan en la toma de decisiones, emprenden acciones de manera conjunta y se corresponsabilizan de los resultados, sin perder de vista el rol de cada uno de ellos.	<b>Contenidos</b> Se cumple con lo dispuesto en el artículo tercero constitucional, en el cual se define que los materiales, así como las estrategias didácticas, serán adecuados para cada nivel, tomando en cuenta las edades y las capacidades de las y los estudiantes.

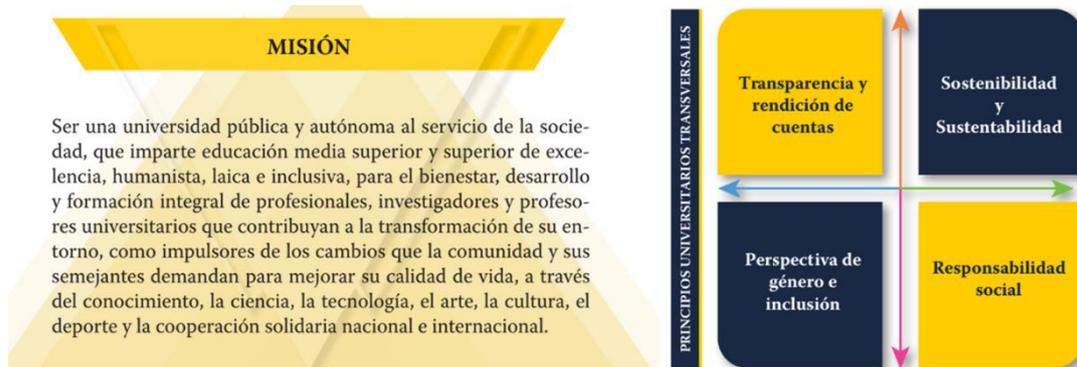
Source: Taken from Government of Mexico. [www.gob.mx](http://www.gob.mx).

## 2.2 ACTION

The action phase is aimed at fulfilling one of the transversal university principles, the "Gender and Inclusion Perspective" as a fundamental part of the vision of the Autonomous University of Campeche (see Figure 2).

**Figure 2**

*The Autonomous University of Campeche (UACAM)*

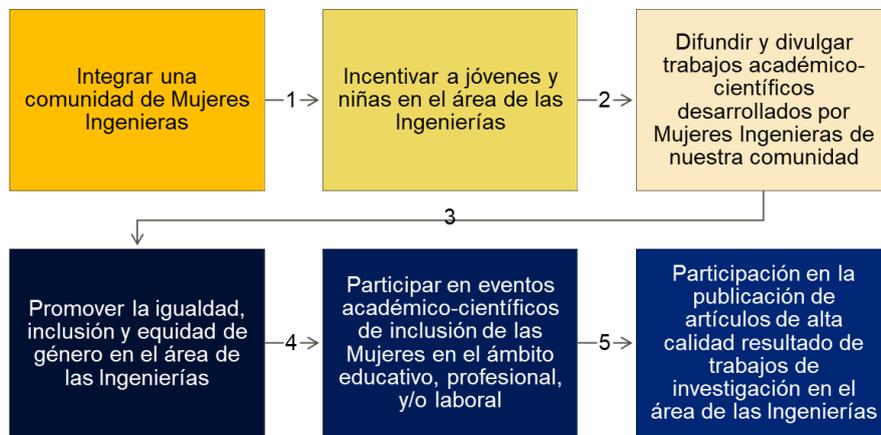


Source: Taken from the Institutional Development Plan 2022-20226 UACAM.

The method used specifies the actions defined in the Women Engineers Project for analysis and reflection. The specific objectives of the project are described in Figure 3.

**Figure 3**

*The Women Engineers Project with code 011/UACAM/2024*



Source: The source.

### 3 DISCUSSION AND RESULTS

The Universidad Autónoma de Campeche (Universidad Autónoma de Campeche, 2025) applies this institutional framework to its local context. Although there is not extensive academic information published on its specific plan, UACAM, like other public HEIs, has a University Equality and Inclusion Unit (UII) in charge of mainstreaming gender equality in all university functions. This unit coordinates gender-based violence prevention programmes, awareness-raising workshops and campaigns to promote the equal participation of women

and gender-based diversities. As the national diagnosis points out, the main task of these units is to "evaluate the actions, policies and programs in compliance with the Equality Policy." It is understood that, at UACAM, the UII supervises protocols against harassment, collaborates with the University Ombudsman's Office and disseminates an institutional culture based on equality.

In the academic field, UACAM promotes gender equity through various initiatives: it adjusts its educational offer to include content on human rights and gender, and promotes equity in enrollment (e.g., with scholarships for vulnerable groups). In addition, the university promotes student support services (mental health, vocational guidance, safe transportation) that especially benefit women and people in disadvantaged situations. These measures reflect the understanding that gender equity is not only a legal matter but an essential educational value. In accordance with the research, it is expected that the UACAM seeks to overcome stereotypes on campus and facilitate access to traditionally male careers for female students, a goal that the NEM also promotes.

Research Project 011/UACAM/2024 Women Engineers is an initiative that emerges in the Faculty of Engineering of the Autonomous University of Campeche, Mexico and is based on: SDG 4 Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all and SDG 5 Achieve gender equality and empower all women and girls.

**Figure 4**

*The results obtained from the Women Engineers Project, UACAM*



Source: The source.



The priority axes of the NEM are closely linked to the institutional policies of the UACAM and the activities carried out within the Women Engineers Project (see *Figure 4*). Promoting inclusion and guaranteeing broad access to higher education in the area of engineering. On the other hand, it promotes peaceful coexistence through and respect that seek environments free of violence, aligning with the values of the culture of peace of the NEM. In addition, in line with the humanistic approach of the NEM, the UACAM and the Women Engineers Project, community outreach is promoted: their academies carry out social and environmental projects in the municipalities of Campeche, integrating knowledge and encouraging professional training in Engineering.

On the other hand, in an analysis of correspondence with the principles of the NEM, the most relevant points can be specified:

- *Reassessment of the teaching profession.* Teachers enjoy a free teaching, with technological tools available, continuous training plans (two periods a year), support for all kinds of academic, cultural and scientific events programmed in the Annual Operational Plan, among other benefits of notable importance.
- *Infrastructure.* The Autonomous University of Campeche has adequate physical spaces for each of its affiliations, in addition to providing a Hygiene Safety
- *Governance.* There is a defined and organized structure of the different levels of governance and the responsibilities of each of them. It is a solid institution that has a Quality Management System where processes are defined in an institutional way.
- *Contents.* In particular, UACAM seeks the continuous certification of its Educational Programs, for this reason, it takes actions of continuous updates and improvements in the Learning Unit Programs through the teacher academies and curricular committees in adherence to well-defined processes.

#### **4 CONCLUSIONS**

The results show that the actions carried out so far have had the support of the different actors identified (UACAM, professors, students, women and society) and have met the specific objectives of the project based on the priority axes of the NEM (University Guidelines, infrastructure and financial support, co-responsibility in student support initiatives and professional academic training). A project with a very long way to go, some lines of action already identified are: collaboration with various educational and government institutions;

linkage with project and business incubators; and to promote sustainability in the area of engineering.

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