Postgrados espol®

MASTER'S IN

ENGINEERING AND AIR CONDITIONING PROJECTS

RPC-SO-09-No.174-2023

Choose **ESPOL**

INSTITUTIONAL PRESTIGE

INTERNATIONAL PARTNERSHIPS AND ALLIANCES

EXCLUSIVE CAMPUS LOCATION

MODERN INFRASTRUCTURE

ENGAGEMENT WITH SOCIETY

EMPLOYABILITY

6,897
GRADUATES

126
INTERNATIONAL ALLIANCES

Institutional **Awards:**

RANKINGS SCIMAGO INSTITUTIONS

QS UNIVERSITY RANKINGS LATIN AMERICA

THE WORLD UNIVERSITY RANKINGS

SUSTAINABLE DEVELOPMENT GOALS

About the **program**

The Master's program trains fourth-level professionals specialized in HVAC projects and engineering. These professionals act positively in all stages of HVAC projects, providing energy efficiency and sustainability solutions as differentiating elements in the market.

Our students will learn to identify customer requirements, properly select equipment and technologies, use software for energy simulation, automate HVAC systems, develop and execute HVAC projects in coordination with other engineering and architecture departments, and establish facility management and maintenance plans.

In addition, students will know about cross-cutting topics such as energy sustainability in buildings and soft skills training in written and oral communication, which is essential for connecting with clients and selling projects.

Our program is comprehensive in the air conditioning field and will provide you with all the tools and skills to address current and future market challenges.

94%
employability rate in our programs.

69%
of our graduates work in recognized companies.

88%
of graduates consider the content of our programs relevant.

***FIMCP - Graduate Follow-up Survey.**

Meet you **Coordinator**

"Our program will allow you to apply cutting-edge theoretical and practical knowledge in the design, installation, management, and maintenance of air conditioning facilities so that you can lead this professional field. We have assembled an outstanding teaching staff with huge professional experience and a high academic degree from world-renowned universities.".

Frank Porras, **M.Sc.**
Contact: fvporras@espol.edu.ec

¿Why are we your **best option?**

1. The program focused on the cycle of HVAC projects, allowing students better to understand projects and their different stages' interrelation.

2. The program has professors with extensive professional experience in the HVAC industry and fourth-level degrees (Master's and Doctorate).

3. Exceptional campus and laboratories equipped for experimental practices and training with commercial equipment.

Licenses and **study platforms:**

Office 365 · LinkedIn Learning · CHAP Hourly Analysis Program · python · EnergyPlus · CANVAS by Instructure · espol Centro de Información Bibliotecaria · AUTODESK

Other **benefits:**

Latina Seguros

ESPOL postgraduate students receive personal accident insurance. **More details about this benefit can be found [here].**

Program **Details**

¿Who Should **Apply**?

Professionals with a bachelor’s degree, preferably in the broad fields of engineering, industry, and construction, who are interested in updating their knowledge and transforming current manufacturing management paradigms. Applicants with other degrees may be admitted subject to evaluation by the academic committee.

Career **Opportunities**

Upon completing this program, graduates will be prepared to manage and update manufacturing processes, as well as to develop sustainable and innovative solutions that add value through manufacturing in the industry.

Modalidad Híbrida:

The program combines online synchronous and asynchronous classes, self-study and guided activities, and face-to-face activities such as facility visits, laboratory practices, and workshops with a practical focus.

Horarios de clases teóricas:

Thursday and Friday: 19h00 to 22h00 / Saturday: 9h00 to 16h00.
(12 hours per week).

Academic Program

Duration: 1 year + graduation project

First Academic Term:

1. Principles of HVAC, Design Criteria and Calculation
2. HVAC Technology
3. Design and calculation of HVAC systems
4. Special HVAC Applications
5. Energy Sustainability

*Electiva

Second Academic Term:

6. Control and Regulation Systems
7. Degree Project 1 - MIPC
8. Project Management in HVAC industry
9. Implementation of HVAC Projects

Capstone project:

10. Management of HVAC facilities
11. HVAC maintenance engineering

*Electiva

12. Degree Project 2 – MIPC

Third Academic Term:

13. Degree Project

→ **Master's in Engineering and Air Conditioning Projects**

Nuestros **docentes:**

Guillermo Soriano I., Ph.D.

Doctorate in mechanical engineering from **Texas A&M University**. Director of the Sustainability Program and the **Centro de Energías Renovables y Alternativas (CERA)** at ESPOL. His professional activity is focused on sustainable construction and the efficient use of energy in buildings and **HVAC systems**. President of **ASHRAE-ATEAAR** (2023 - 2024), he has served on different technical committees at national, regional and global levels.

Andrés Valarezo R., M.Sc.

M.Sc. in "Power Engineering and Engineering Thermo-Physics" from **Shanghai Jiao Tong University (China)** and "Strategic Management" from **Universidad Particular de Especialidades Espíritu Santo (Ecuador)**. President of **AIRKKON CORP & AIRKON ECUADOR S.A.** President of **ASHRAE-ATEAAR** (2024-2025).

José Luis Ramírez D., Ph.D.

Doctorate in mechanical engineering from the **University of São Paulo, Brazil**. He has more than **15 years of professional experience in HVAC industry and energy efficiency projects.**

Bruno Guerra S., M.Sc.

Mechanical Engineer from **Escuela Politécnica Nacional (EPN)** and Master in Project Management from **Universidad Particular de Especialidades Espíritu Santo (Ecuador)**. General Manager at **BRUGUESA S.A.**

Jaqueline Litardo M., Ph.D.

IMechanical Engineer from **Escuela Superior Politécnica del Litoral (Ecuador).** Doctorate in building engineering from the **Polytechnic University of Milan (Italy)**. Project Analyst at **CERA - ESPOL.**

Nelson Sierra, M.Sc.

Master in Industrial Automation from **National University (Colombia)** and Master in Artificial Intelligence from the **Catholic University of Ávila (Spain)**. With more than 10 years of experience in the **HVAC&R industry,** automation and artificial intelligence.

Carlos Naranjo M., Ph.D.

Doctorate from **De Montfort University in Leicester (United Kingdom)**. Professor and Researcher in the Department of Mechanical Engineering at **Escuela Politécnica Nacional (EPN)**. Wide experience in sizing and selection of **HVAC equipment** and energy efficiency projects.

Andrés Schwarz, M.Sc.

Master in Energy, **Housing Certifier (Secr. of Energy), LEED-AP, WELL AP, Fitwel Ambassador, and Living Future Accredited**. He is **WELL Faculty, USGBC Faculty and USGBC Pro Reviewer**, also being an auditor, trainer and expert in the EDGE standard (World Bank). Thesis reviewer for students from the **University of Buenos Aires, University of Twente (Holland), Lund University (Sweden) and University of Virginia (USA).**

Frank Porras C., M.Sc.

Master in Energy Planning from **Campinas University (Brazil).** Professor of undergraduate and postgraduate courses related to thermal sciences and energy systems. Consultant on buildings **sustainability certifications and energy simulations.** Member of technical committees at national level.

Admission information and requirements:

Registration open - January 2025

Scan and learn more about the Admission Process here:

Requirements:

1. Application test.
2. Academic record from your last degree.
3. Interview.
4. Bachelor’s degree registeered on SENESCYT.
5. Disability ID Card (if able).
6. Professional resume.
7. Academic or professional’ts reference letter.
8. Statement of interest.
9. Copy of bill from basic utility service (printed or digital).

For Ecuadorian applicants:

Copy of the ID card and current voting certificate in color

For foreign applicants:

Copy of the ID card in color.

Copy of Bachelor’s degree legalized through consular channels and registered on SENESCYT.

Scholarship and funding:

Total Cost: $8,000 USD

Tuition fee: $7,500 USD | **Admission Fee:** $500 USD

Direct funding up to 18 installments.

Scholarships up to **25%**

20% ESPOL Alumni.
Full payment.

15%
Economic status.
Employee of ESPOL or a public company affiliated with ESPOL.
Early application and payment of the admission exam (up to 15%).

10%
Disability.
Alumni from other public universities in Ecuador.

5%
Alumni from other private universities in Ecuador.

Graduate of a certification or diploma program from FIMCP

Family member of an employee of FIMCP.

Corporate Scholarships

15% For a group of 3 or more students.
10% For a group of 2 students.
5% Employee or member of an institution with alliances with ESPOL.

**The requirements and conditions outlined in the scholarship guidelines for FIMCP professional master's programs apply. Approved by the Academic Council in resolution CUA-FIMCP-2023-05-18-056. Installment amounts are subject to the*

Contact us to learn more about our financing plan:

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Guayaquil - Ecuador

Becas para miembros
ASHRAE - ATEAAR

ASHRAE® Ecuador Chapter

Upon completion of the Master's program, the graduates can carry out their activities competently and professionally in design, installation, and maintenance companies and maintenance departments responsible for HVAC systems in hotels, retail, hospitals, or other commercial and residential buildings. The program combines online synchronous and asynchronous classes, self-study and guided activities, and face-to-face activities such as facility visits, laboratory practices, and workshops with a practical focus.

Among the objectives of the Master's program is to strengthen collaboration between the university, the HVAC industry, and professional associations through professional training courses and workshops, academic exchanges, internships, and practical experiences in the HVAC field.

The Master's program is directly linked with ASHRAE and the Ecuadorian Technical Association of Air Conditioning and Refrigeration (ATEAAR) through professors who are members of these professional associations and student associations such as the ASHRAE - ESPOL Student Branch. Consequently, the following scholarships are available (with a limit of up to 35% of the tuition fee):

- ***10% scholarship for ASHRAE and ATEAAR members.**
- ***10% scholarship for companies related to HVAC and with a high impact on Sustainable Development Goals (SDGs1).**

**Requirements and conditions established in the scholarship guidelines for FIMCP professional master's degree programs and approved by the Academic Unit Council in resolution CUA-FIMCP-2023-05-18-055. Fees are subject to the program.*

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