Master's Degree in
CIVIL ENGINEERING

Specialization in Construction and Sanitation

RPC-SO-16-No.333-2020

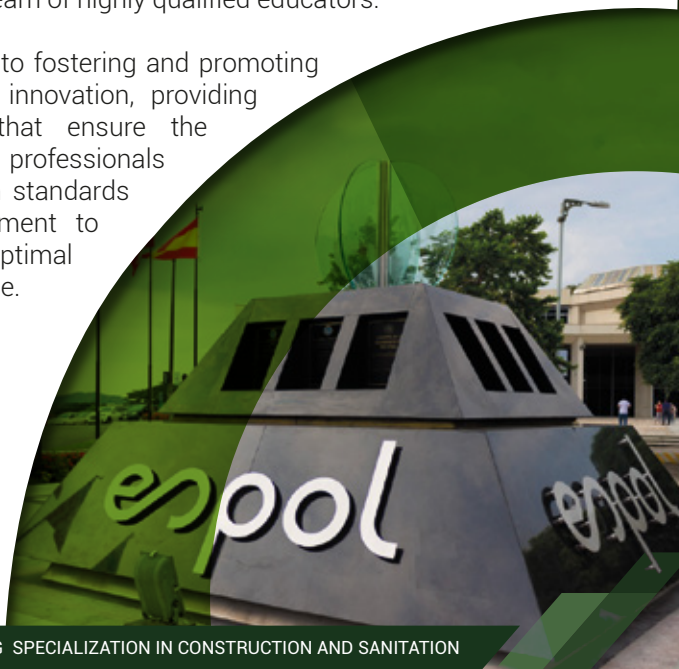
+66 years

training highly skilled professionals to meet strong job market demands

The Escuela Superior Politécnica del Litoral (ESPOL) was founded in 1958 to fulfill the growing demand for specialized education aimed at advancing the socio-cultural and economic development of the country, while adapting to the dynamic needs of the market. Our mission is to collaborate with society to enhance quality of life and foster sustainable, equitable development through holistic and proficient education, research, and innovation.

With sixty-six years, ESPOL has innovated in educational programs, providing an academic offer meet national and international quality standards, supported by a team of highly qualified educators.

ESPOL is firmly committed to fostering and promoting high-impact research and innovation, providing educational experiences that ensure the training of well-rounded professionals well-rounded, applying high standards of quality and a commitment to excellence and achieving optimal results with customer service.



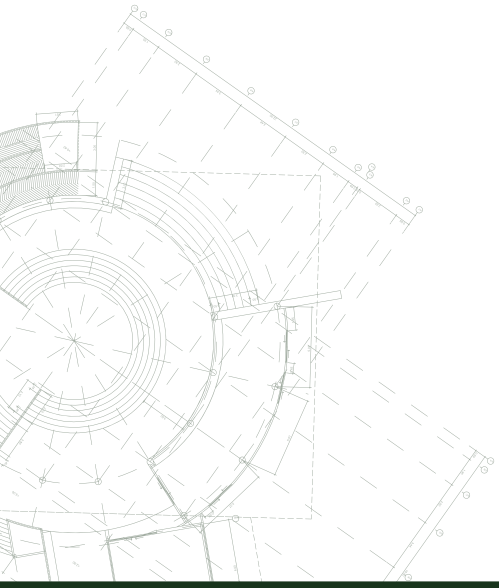
Choose ESPOL!

Awards

Best Public University in Ecuador
recognized by the QS World University Ranking.

Ranked #50 in research
according to the QS World University Ranking: Latin America and The Caribbean.

Ranked #1 in sustainability at the national level
according to the UI GreenMetric World University Ranking of Sustainability, and 211/912 worldwide.



Purpose

The Master of Civil Engineering at ESPOL aims to develop professionals competencies to perform managerial and sub-managerial activities in the areas of construction and sanitation, demonstrating responsible, ethical, innovative, and technical skills, as well as technical, social, and environmental management.

Target audience

Professionals involved in the field of construction and sanitation, or those who have acquired academic, business, or industrial experience in these areas.

Graduate profile

- Work as a consultant in the construction and sanitary sectors.
- Lead construction and sanitary projects in managerial and sub-mangerial positions.
- Perform the evaluation of existing structures.
- Design innovative technologies in construction and sanitation field.
- Establish as a project manager in the public and private sectors, performing evaluation and execution activities.
- Engage in teaching and research.

What do you achieve with this master degree program?

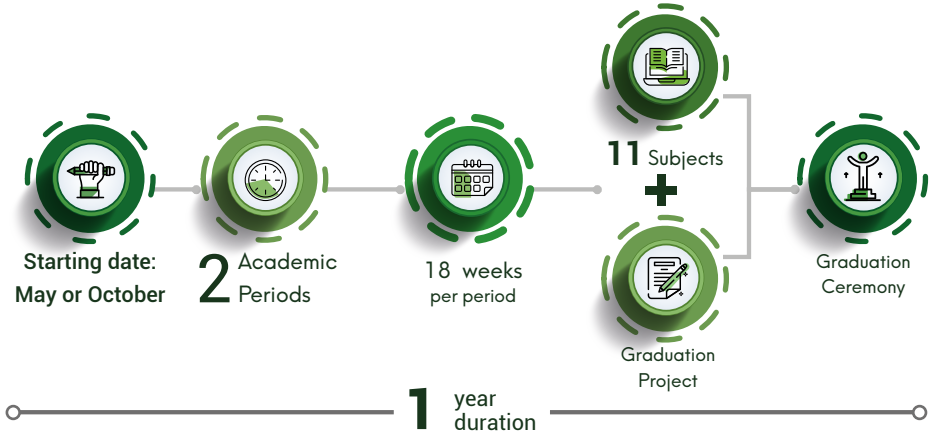
- Acquire innovative knowledge for the management of water resources, liquid and solid waste.
- Propose solutions to challenges in the construction and sanitation areas through the development of alternatives based on economic, social, and environmental criteria.
- Develop advanced skills in civil project management and planning.
- Explore innovative materials of high-durability that can be implemented in construction processes.
- Design innovative water treatment and purification systems.

Key factors

- **One year of study**
- **Access to the Graduate Academic Management System (SGAP) platform.**
- **BIM Methodology of study**
  Building Information Modeling study for smart project lifecycle management.
- **International internship**
- **Access to equipped laboratories**
  For graduation project experiments and practices.
- **Extracurricular free-access courses**
- **Student benefits**
  Alumni discounts (card), institutional email, access to campus and virtual library, job portal, access to facilities, sports areas, gym and parking.

Methodology of study

The program is hybrid which means that classes are are held in collaboration with the instructor either in person or virtual. Practical laboratory activities are scheduled in advance to ensure proper planning.



Facilities

- Synchronous online sessions.
- Access to the virtual LMS platform with videoconferencing tools.
- Recorded classes and educational material available and downloadable 24/7.
- Executive evaluation policy.
- Access to the virtual library of ESPOL.
- Laboratory practices, 1-year educational software licenses.
- Free extracurricular courses, seminars, and keynote lectures.
- Supervised graduation project.

Master's Degree in Civil Engineering

Specialization in Construction and Sanitation

Duration: 1 YEAR / 30 credits

Advanced disciplinary training
Research
Graduation

Subjects		Hours
M1	Water Resources Management	48
M2	Management of Liquid and Solid Waste	48
M3	Advanced Management in Sanitation	48
M4	Sustainability in Sanitation	48
M5	Applied Geotechnics to Edifications and Sanitar Systems	48
M6	Techniques and Special Materials in Construction	48
M7	Advanced Analysis and Seismic Design of Edifications	48
M8	Evaluation and Rehabilitation of Edifications	48
M9	Advanced Management in Construction	48
M10	Elective Subject	48
M11	Management of Construction using BIM Methodology	48
M12	Graduation Project	140

Competencies

01 

Manage the construction process of buildings using standards, tools, and programs related to seismic-resistant structure design.

02 

Explore geotechnical methods for the installation of buildings and sanitary systems.

03 

Implement sustainable solutions at different stages of construction using and reusing renewable resources.

04 

Manage water resources for their proper planning, utilization, and control in projects, ensuring social, environmental, and technical management.

05 

Manage sewerage and wastewater treatment systems.

Staff

The master's degree program will be taught by certified and experienced staff:

Jeffrey Barberán Solorzano

Master of Business Administration, Graduate School of Business Administration ESPAE – Ecuador.
Civil Engineer, Escuela Superior Politécnica del Litoral – Ecuador.

Leonardo Gutiérrez Garcés

Post - Ph. D. in Interface Sciences, King Abdullah University of Science and Technology – Saudi Arabia.
Ph.D. in Civil and Environmental Engineering, University of Illinois – USA.

Cristian Salas Vásquez

Master in Hydraulic Engineering with a specialization in Sanitary Engineering, National Autonomous University of Mexico (UNAM) – Mexico.
Civil Engineer, Escuela Superior Politécnica del Litoral – Ecuador.

Guillermo Muñoz Villa

Master in Structural Engineering and Geotechnics, Pontificia Universidad Católica de Chile – Chile.
Civil Engineer with a specialization in Structures, ESPOL - Ecuador.

Víctor Orozco Chávez

Master in Architecture, University of Illinois at Urbana-Champaign - USA.
Master of Science in Civil Engineering (Construction Engineering and Management), University of Illinois at Urbana-Champaign - USA.

Nadia Quijano

Master in Structural and Construction Engineering, Polytechnic University of Catalonia - Spain.
Civil Engineer, Escuela Superior Politécnica del Litoral - Ecuador.

Pedro Rojas Cruz

Ph. D. of Philosophy in Civil Engineering, specializing in Seismic-Resistant Steel Structures at Lehigh University - USA.
Master of Science in Civil Engineering, specializing in Seismic-Resistant Structures Design at the State University of New York at Buffalo - USA.

Eduardo Santos Baquerizo

Ph.D. in Environmental Sciences, Universidad Nacional de Piura - Peru.
Master in Geotechnics, University of Guayaquil – Ecuador

Master in Teaching and Research, ESPOL – Ecuador.
Diploma in Higher Education Teaching, University of Guayaquil - Ecuador.

Justo García

Ph.D. Architect, Polytechnic University of Madrid – Spain.
Architect, Higher Technical School of Architecture of Madrid – Spain.

Samantha Jimenez

Ph.D. in Research, Modeling and Risk Analysis in the Environment, Polytechnic University of Madrid - Spain.
Master in Research, Modeling and Risk Analysis in the Environment, Polytechnic University of Madrid - Spain.
Diploma in Management of Environmental Liabilities in the Metallic and Non-Metallic Mining Industry, Universidad Andrés Bello - Chile.

Mónica Marina Rojo

Master in Groundwater Hydrology, Polytechnic University of Catalonia - Spain
Master in Renewable Energy, Camilo José Cela University - Spain.
Geologist, University of Salamanca - Spain.

Laura Mendoza Sion

Master in Engineering Sciences in Structural and Geotechnical Engineering, Pontificia Universidad Católica de Chile - Chile.
Civil Engineer, Universidad Laica Vicente Rocafuerte de Guayaquil- Ecuador.

Anabel Castillo Rodríguez

Ph.D. (c) in Innovation in Building Technologies, Polytechnic University of Madrid - Spain.
Master in Innovation in Building Technologies, Polytechnic University of Madrid - Spain.
Civil Engineer, Universidad Técnica Particular de Loja- Ecuador.

Carlos Pampliega García

Master in Architectural Restoration, University of Valladolid – Spain.
Architect specializing in Building, University of Valladolid – Spain.

Jaime Galvez Ruiz

Ph.D. Civil Engeneer, Polytechnic University of

Madrid - Spain.
Civil Engineer, Canal and Port Engineering, Polytechnic University of Madrid - Spain.

Pablo Mazón Ortíz

Ph.D. (c) in Structural Engineering , Foundations and Materials, Polytechnic University of Madrid – Spain.
Master Science in Materials Engineering, University Carlos III of Madrid – Spain.
Mechanical Engineer, Universidad Técnica de Ambato – Ecuador.

Juan Núñez Morales

Ph.D. Civil Engineering and Environmental Engineering, University of Illinois at Urbana-Champaign - USA.
Master of Science in Construction Management, University of Illinois at Urbana-Champaign - USA.
Master in Computer Science, University of Illinois at Urbana-Champaign - USA.
Civil Engineer, Instituto Tecnológico de Santo Domingo (INTEC) - Dominican Republic.

Francisco Saavedra

Ph.D. in Natural Resources, University Martin Luther Halle-Wittenberg (MLU) - Germany.
Biologist, Universidad Mayor de San Andrés (UMSA) - Bolivia.

Juan García Bermejo

Ph.D. in Environment and Sustainable Mining, Polytechnic University of Cartagena - Spain.
Master in Water and Terrain Engineering, specialization in Research, Polytechnic University of Cartagena - Spain.
Civil Engineer, Canal and Port Engineering, specializing in Hydraulics and Energy, Polytechnic University of Valencia- Spain.

Fernanda Mejía Peralta

Master in Hydraulic Engineering and Environment, Polytechnic University of Valencia- Spain.
Civil Engineer, Escuela Superior Politécnica del Ejercito - Ecuador.

Admission requirements

- Color copy of ID and voting certificate.
- Color copy of undergraduate degree, registered in SENESCYT.
- Copy of undergraduate transcripts.
- Curriculum vitae (free format, 2-page limit).
- Two recommendation letters (academic, research, or professional).
- Motivation letter (free format).
- Admission test.
- Interview.
- If you have a foreign degree, please provide a copy of the apostilled or consular-legalized bachelor's degree, along with a certificate of degree registration issued by SENESCYT.
- Color copy of disability card (if applicable).

Timeframe

9 months (classes)
+ 3 months (Thesis + graduation process)

Session times

Fridays: 2h/day
Sat and Sun: 4h/day

Financing

- Direct credit with ESPOL
- Student Bank Credit
- Scholarship Application

Ask about our scholarship or financial aids!

Payment Methods

- Bank Transfers
- Certified Checks
- Deposits

Postgrados espol

Facultad de Ingeniería en Ciencias de la Tierra

espol espol espol1

www. espol.edu.ec

Information

Faculty of Earth Sciences Engineering

www.postgrados.espol.edu.ec/es/programas/fict

Registration

maestria.civil@espol.edu.ec

Campus Gustavo Galindo - Km. 30,5 Vía Perimetral

Guayaquil - Ecuador