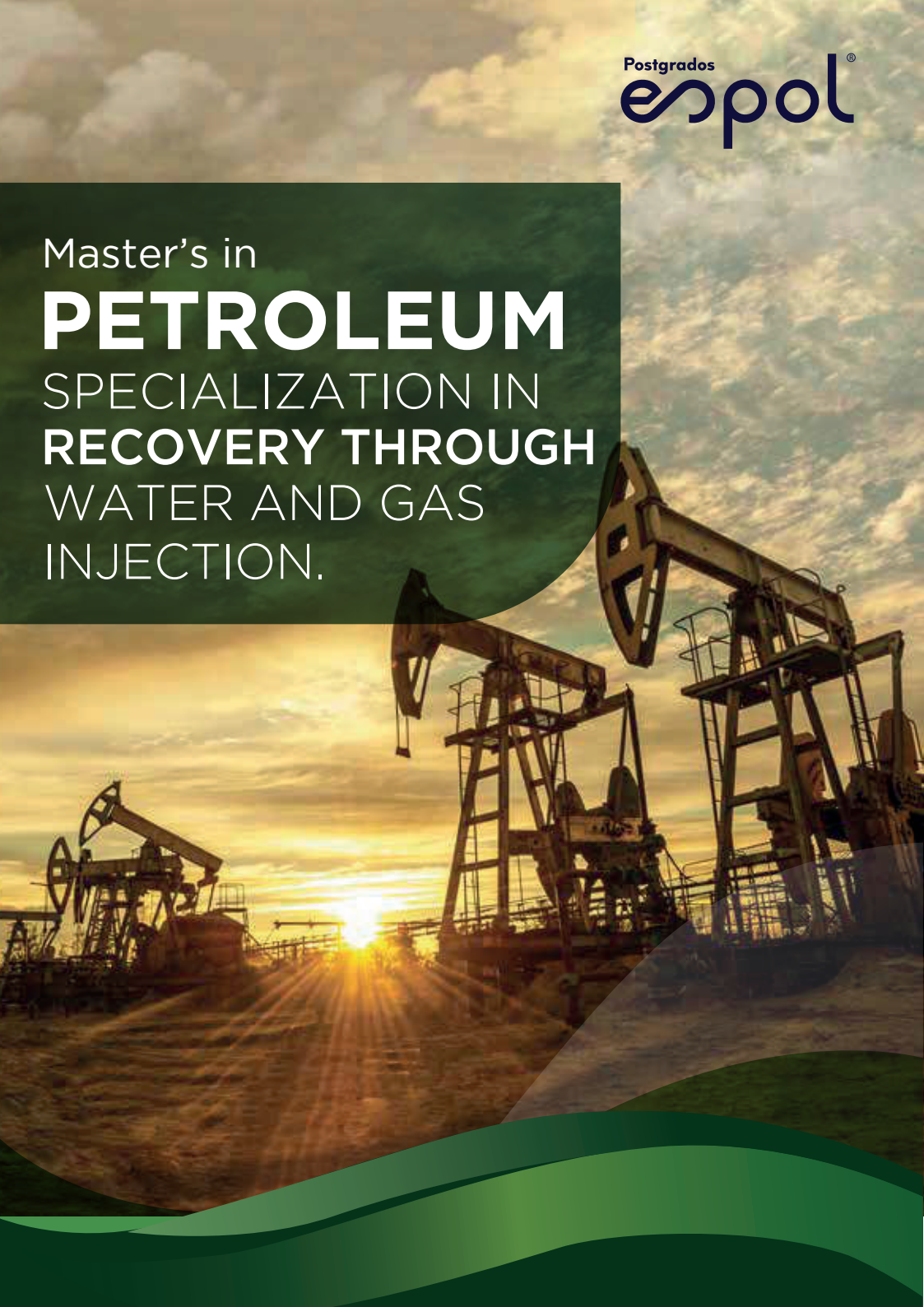
Postgrados
espol

Master's in

PETROLEUM

SPECIALIZATION IN **RECOVERY THROUGH** WATER AND GAS INJECTION.



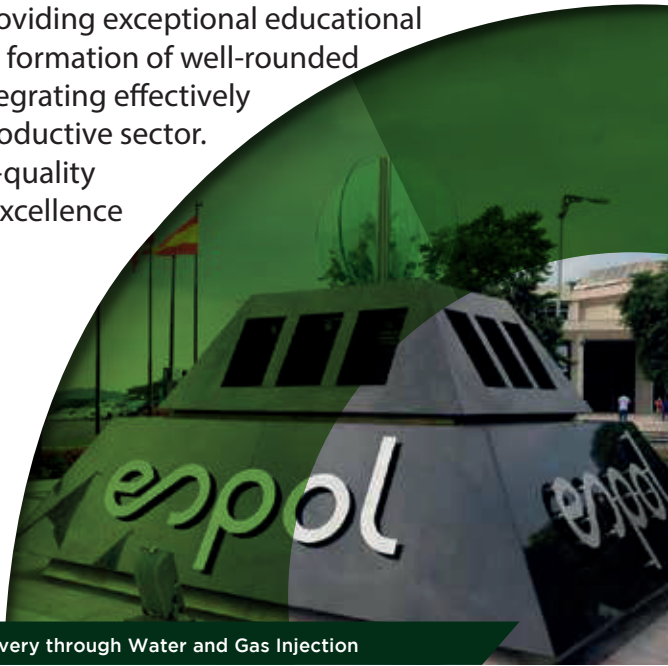
+66 Years

Training highly skilled professionals with strong job demand.

Founded in 1958, the Escuela Superior Politécnica del Litoral (ESPOL) emerged in response to the growing demand for specialized education that contributes to the sociocultural and economic development of the country and addresses the changing needs of the environment. Our mission focuses on cooperating with society to improve quality of life and promote sustainable and equitable development through comprehensive and competent education, research, and innovation.

With over sixty-three years of experience, we constantly innovate in teaching programs, ensuring an academic offering that meets national and international quality standards, delivered by highly qualified faculty.

We are committed to developing and disseminating high-impact innovation and research, providing exceptional educational experiences that ensure the formation of well-rounded professionals capable of integrating effectively and dynamically into the productive sector. Our graduates uphold high-quality standards, with a focus on excellence and customer satisfaction.



Purpose of the Master's Program

ESPOL's Master's in Petroleum Engineering program provides professionals with advanced training in hydrocarbon recovery using water and gas injection. It prepares participants to address real-world challenges by formulating, managing, and executing projects responsibly, ensuring the optimization of Ecuador's petroleum reserves.

Target Audience

This program is designed for professionals in the fields of Petroleum Engineering, Geology, Chemistry, Mining Engineering, or those with academic and industrial experience in the oil and gas sector.

Graduate Profile

- Apply best practices for calculating reserves and production of oil and natural gas, considering economic factors and applicable regulations.
- Evaluate production systems and their components to meet needs within realistic constraints.
- Use modern technology to solve critical problems in petroleum engineering practice.
- Serve as consultants in the fields of reserve recovery through water and gas injection.
- Lead water and gas injection reserve recovery projects in executive roles.

What Can You Achieve with This Master's Degree?

- Develop engineering solutions to ensure optimal procedures in the exploitation of oil and gas reservoirs.
- Understand the key principles required for implementing pilot projects in various types of recovery methods.
- Optimize production systems to execute pilot projects for primary, secondary, and enhanced recovery.
- Contribute to societal development by applying knowledge to generate valid solutions in economic, political, ethical, and institutional contexts.
- Analyze the legal framework for contracts affecting these projects, establishing guidelines and strategies for current and future initiatives.

Differentiating Factors

One-Year Program
Master's degree specializing in Recovery through Water and Gas Injection.

Advanced Computational Tools
Utilize Halliburton's Suite and Nexus Reservoir Software to simulate water and gas injection recovery processes.

Internationalization in Thesis Projects
Participate in international academic stays to complete thesis projects, supported by partnerships with the National University of Colombia and the University of Bergen, funded by the Norwegian Agency for Development Cooperation.

Extracurricular Courses
Free access to supplementary courses to strengthen knowledge.

Professional and Academic Excellence
Faculty with 10 to 20 years of national and international experience.

Politécnico Benefits
Alumni discounts (with card), institutional email, access to campus and virtual libraries, job placement services, use of facilities, sports areas, gym, and parking.

Study Methodology

The Master's in Petroleum Engineering program is offered in a hybrid format, specially designed to provide flexibility and convenience for professionals working in the industry.

Start Date:
May
2025

2 Academic Periods

1nd Period:
18 weeks
2nd Period:
26 weeks

Content:
11 Courses +
Graduation
Project

Graduation Ceremony

Facilities

- Synchronous and Asynchronous Online Sessions.
- Standardized Evaluation Policy.
- Recorded Classes and Downloadable Learning Materials Available 24/7.
- Access to ESPOL's Virtual Library.
- Educational Licenses for Halliburton’s Computational Suite.
- Free Courses, Seminars, and Webinars.
- Supervised Graduation Project.

Master's in Petroleum

Specialization in Recovery through Water and Gas Injection

Duración 1 Year / 392 Hours

Advanced Disciplinary Process

Degree Components

Materias		Horas
M1	Geological Characterization of Reservoirs	32
M2	Dynamic Characterization of Reservoirs	32
M3	Conventional and Unconventional Reservoirs	32
M4	Reservoir Simulation	32
M5	Legal Standards and Hydrocarbon Project Formulation	32
M6	Optimization in Primary Extraction Methods	32
M7	Fractures and Reservoir Stimulation	32
M8	Integrated Reservoir Management	32
M9	Recovery through Conventional Water Injection and Invasion	32
M10	Recovery through Natural Gas Injection and Invasion	32
M11	Recovery through Non-Conventional Water Injection and Other Methods	32
M12	Graduation Project	40

Personal Competencies

01 Understand reservoir characterization through geological, geophysical, and geostatistical concepts.

02 Analyze hydrocarbon laws and operational regulations to develop a comprehensive development plan.

03 Apply theoretical knowledge to real-world cases using Nexus software for reservoir mathematical simulation.

04 Recognize matrix stimulation systems, new stimulation methods, and the well-fracture-reservoir system to design a fracture and stimulation program.

05 Utilize corporate resources (human, technological, and financial) to maximize reservoir profitability through recovery optimization.

Admission Requirements

- Color copy of ID and voting certificate.
- Color copy of undergraduate degree and its registration with SENESCYT.
- Copy of undergraduate academic transcripts.
- Resume (free format, max. 2 pages).
- Two letters of recommendation (academic, research, or professional).
- Motivation letter (free format).
- Take the aptitude test.
- If your degree is from a foreign institution: a notarized or apostilled copy of your undergraduate degree and a registration certificate issued by SENESCYT.

Master's Program Duration

9 meses (clases)
+ 3 meses (Tesis + Proceso Graduación)

Financing Options

- ESPOL Direct Credit
- Student Bank Loans
- Scholarship Applications

Ask about our scholarship programs or financial aid options!

Class Schedule

Start Date: May/2025
Friday: 6:00 PM - 10:00 PM
Saturday & Sunday: 8:00 AM - 2:00 PM

Payment Methods

- Online payments with credit or debit cards.
- Bank transfers.
- Certified checks
- Bank deposits

espol®

Facultad de Ingeniería en
Ciencias de la Tierra

www.espol.edu.ec

espol espol espol1

Faculty of Engineering in Earth Sciences

Information and Contacts:

Phone Numbers:

0994877292 - 0960141507

Email: mspetroleos@espol.edu.ec

www.fict.espol.edu.ec/postgrados

Address: Gustavo Galindo - Km. 30,5 Vía Perimetral

Guayaquil - Ecuador