ESPOL: a change exalted by our strengths.

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Academic Vice Rector, ESPOL
Guayaquil, Ecuador
Content

1. ESPOL: who are we?
2. Education: our point of view.
3. Some of our work.
4. Internationalization.
Population: 15,74 millions
Guayaquil is a coastal city, capital of the Guayas Province.

Located nearby the Guayas River, it is the largest city of the country, with a population of around **2.4 million people**.
Founded on October 29th

1958

Start of academic activities

1960’s

BID/ESPOL I PROJECT (1972 – 1982)

1970’s


• Improvement of existing laboratories.
• Technical Programs (3 years programs) started.
• Creation of graduate programs.
• Beginning of research activities.
• Construction of Campus Gustavo Galindo Velasco.
Recognition as A-level higher education institution

Inauguration of Campus Gustavo Galindo (1991)
Creation of CENAİM-ESPOL

VLIR-ESPOL PROGRAM
• Cooperation with Belgian Flemish Universities.
• Contribution to strengthening of research capacities at ESPOL.
• 16 Ph.D. graduate.
• 6 research centers.
• Physical and technological infrastructure improvement.

• National Accreditation CEAACES
• International Accreditation: ABET, AASCB

1990’s

1991

2000

2009

2014
VISION

To be a leader and a benchmark for international higher education.

MISSION

To educate professionals of excellence, leaders, entrepreneurs, with solid moral and ethical values to contribute to the development of the country, impelling its social, economic, environmental and political scopes. To do research, technology transference and high quality extension to serve society.
ESPOL in numbers: Professors

- 928 Professors and Instructors
- 74% Instructors (683)
- 10% Professors (91) Tenure
- 17% Professors (154) Tenure-Track
- 83% Full-Time
- 17% Part-Time

239 Professors with doctorate degree
All Professors with Master’s and Ph.D. Degree
87 Professors currently as Ph.D. Students
26 Graduates as M.Sc. Students
ESPOL in numbers: Students

- 31 Undergraduate Programs: around 11,000 students
- 16 Graduate Programs: around 1,500 students

MEN 59%
WOMEN 41%

Around 12,500 Students

25,000 Graduates from ESPOL
Education: our point of view

✓ Educate to promote reasoning.

✓ Institutional education focus:
  ✓ Reasoning
  ✓ Bio-consciousness
  ✓ Entrepreneurship (understood as adding value)
  ✓ Systematic thinking
  ✓ Knowledge contextualization

✓ Institutional learning outcomes
Education: our point of view

✓ Millennium goals for development.

✓ Qualities for a professional
  ✓ Technology usage
  ✓ Communicative
  ✓ Empathic
  ✓ Constant learning
  ✓ Analytic
  ✓ Research/creativity
  ✓ Multi-disciplinary – hands on approach
  ✓ Entrepreneurship – viable models
  ✓ Multi-cultural – global implementation
  ✓ Social consciousness – service approach
Institutional Learning Outcomes

- Effective communication
  - Spanish
  - English
- Long-life learning
- Teamwork
- Entrepreneurship
- Knowing contemporary issues
- Professional and ethical responsibility
Our way…

✓ Curricular routes: formation and evaluation
  ✓ Focused not only in the disciplinary aspects but soft skills too.

✓ Capstone (integrating course)
  ✓ To validate the professional profile
  ✓ Horizon: integrate students from different programs to solve real problems.

✓ Accompaniment
  ✓ Counseling
  ✓ Student-to-student tutoring
  ✓ Clubs
  ✓ Induction processes for students and teachers
  ✓ Pedagogical preparation and support
RESULTADOS DE APRENDIZAJE

1. Comprender la responsabilidad ética y profesional.
2. Tener la habilidad para comunicarse efectivamente, tanto oral y escrito.
3. Tener la capacidad para comunicarse en inglés.
4. Reconocer la necesidad de desarrollar habilidades para viver y aprender en el mundo que nos rodea.
5. Comprender las bases del desarrollo contemporneo.
6. Tener la capacidad para trabajar como parte de un equipo multidisciplinario.
7. Reconocer la necesidad y tener las habilidades para emprender.

SEMESTRES

NIVEL 100-I

1. IDIO2002 COMUNICACIÓN I
2. IDIO2003 COMUNICACIÓN II
3. MATG1013 ANÁLISIS NUMÉRICO
4. MATG1029 MATEMÁTICAS AVANZADAS
5. ESTG1005 ESTADÍSTICA
6. ELEO1004 ELECTROTECNIA
7. EYAG1006 ELECTRÓNICA BÁSICA
8. ADISO1001 INTRODUCCIÓN A LA GESTIÓN AMBIENTAL

NIVEL 100-II

1. IDIO1001 INGLÉS I
2. IDIO1002 INGLÉS II
3. IDIO1003 INGLÉS III
4. MECG1003 DIBUJO PARA INGENIERÍA
5. MECG1001 MECANICA VECTORIAL
6. MECG1003 CIENCIA E INGENIERÍA DE MATERIALES
7. MECG1002 INTRODUCCIÓN A LA INGENIERÍA MECÁNICA

NIVEL 200-I

1. MECG1004 TERMODINÁMICA
2. MECG1002 TERMODINÁMICA APLICADA
3. ELEO1004 ELECTROTECNIA
4. EYAG1006 ELECTRÓNICA BÁSICA
5. MECG1001 MECANICA DE SOLIDOS I
6. MECG1001 MECANICA DE SOLIDOS II
7. MECG1002 MECANICA DE SOLIDOS III

NIVEL 200-II

1. MECG1005 MECANICA DE FLUIDOS I
2. MECG1006 MECANICA DE FLUIDOS II
3. MECG1007 MECANICA DE FLUIDOS III
4. MECG1013 MECANICA DE FLUIDOS IV
5. MECG1015 MECANICA DE FLUIDOS V
6. MECG1016 PROCESOS DE MECANIZACIÓN

NIVEL 300-I

1. MECG1019 DISEÑO MECÁNICO
2. MECG1018 INSTRUMENTACIÓN
3. MECG1017 TRANSFERENCIA DE CALOR
4. MECG1020 CINEMÁTICA DE MÁQUINARIA
5. MECG1010 MECANICA DE MAQUINARIA

NIVEL 300-II

1. MECG1004 TERMODINÁMICA
2. MECG1002 TERMODINÁMICA APLICADA
3. ELEO1004 ELECTROTECNIA
4. EYAG1006 ELECTRÓNICA BÁSICA
5. MECG1001 MECANICA DE SOLIDOS I
6. MECG1001 MECANICA DE SOLIDOS II
7. MECG1002 MECANICA DE SOLIDOS III

NIVEL 400-I

1. MECG1024 PROCESOS DE MANUFACTURA
2. MECG1021 DISEÑO DE SISTEMAS TERMOFLUIDOS
3. MECG1017 TRANSFERENCIA DE CALOR
4. MECG1020 CINEMÁTICA DE MÁQUINARIA
5. MECG1019 DISEÑO MECÁNICO

NIVEL 400-II

1. MECG1024 PROCESOS DE MANUFACTURA
2. MECG1021 DISEÑO DE SISTEMAS TERMOFLUIDOS
3. MECG1017 TRANSFERENCIA DE CALOR
4. MECG1020 CINEMÁTICA DE MÁQUINARIA
5. MECG1019 DISEÑO MECÁNICO

NIVEL 500-I

1. MECG1025 MANTENIMIENTO Y SEGURIDAD INDUSTRIAL
2. MECG1023 DINÁMICA DE MECANISMOS
3. MECG1022 DISEÑO DE SISTEMAS MECÁNICOS

NIVEL 500-II

1. MECG1026 MATERIA INTERDISCIPLINAR DE INGENIERÍA MECÁNICA
2. MECG1025 MANTENIMIENTO Y SEGURIDAD INDUSTRIAL
3. MECG1023 DINÁMICA DE MECANISMOS

Institutional Learning Outcomes: routes for Mechanical Engineering
Institutional Learning Outcomes: the routes for Graphic Design
Our basis

✓ A solid education in basic sciences and mathematics.

✓ Top-qualified faculty: PhDs and MSc from the best universities around the globe (Shanghai Rankings).

✓ The foundation: a culture of learning outcomes assessment strengthened by the ABET-ESPOL Project since 2008.
Learning Environments
Learning Environments

Languages Clubs (English, French, Korean, German, Mandarin)
Learning Environments

Students Clubs

- Students Professional Chapters
- Cultural clubs
- Transversal skills clubs
Learning Environments
Innovation in Learning Environments

peer project learning
Innovation in Learning Environments

Gamification
(Programming)
ABET Experience at ESPOL

Programs Accredited since August 2014
- Mechanical Engineering
- Computer Science

In accreditation process
- Civil Engineering
- Industrial Engineering
- Naval Engineering
- Electricity Engineering

Expected accreditation by August 2017
Accreditation Impact... at ESPOL

Mechanical Engineering

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<th>No.</th>
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<th>2015</th>
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<td>Mean</td>
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<td>Teamwork habilities.</td>
<td>3.769</td>
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<td>7</td>
<td>Longlife learning capacities.</td>
<td>3.846</td>
<td>0.249</td>
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Accreditation Impact... at ESPOL

Computer Science

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<td>8</td>
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<td>9</td>
<td>Leadership capacities.</td>
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## Accreditation Impact... at ESPOL

### Other Engineering Programs

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<td>8.846</td>
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<td>0.213</td>
<td>0.333</td>
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</table>
Our Graduates in the community

- 2 Vice-presidents (the current one and a former one)
- Ministers and Secretaries of State
- National Congressmen
- Ecuador’s Representative to International Monetary Fund
- Ecuador’s Representative to Inter American Development Bank

Professors at International Universities

CEO’s on Transnational Firms

Industry Leaders
internationalization

- We realize in order to educate a global citizen our students should interact around the globe: a major effort since 2015.

- We understand it as a two-way exchange.

- Some numbers:
  - More than 10 events organized by ESPOL
  - More than 25 events assisted
  - 134 cooperation agreements (USA: 18)
  - 74 students from ESPOL went to other universities (2016-2017)
  - 62 students came to ESPOL from other universities (2016-2017)
Research Programs

- VLIR – ESPOL Program
- PARCON

- Agriculture and animal production
- Climate and environment
- Education and communication
- Alternative and renewable Energy

- Environmental management
- Industrial Technology
- Economics, business and entrepreneurship
- Human development
- Basic science development
Research Based Learning (RBL)

- RBL is intended for our graduate programs.

- A first experience is implemented with our M.Sc. programs coordinated with VLIR (Belgium)
  - Applied bio-sciences
  - Water resource management

- This first experience will be used to deepen our capacities for RBL in order to implement it for all our M.Sc. Programs and later on into some last-year courses for undergraduate studies.