

# State of Engineering for Global Development

## LATIN AMERICA

[Click here to download the full report](#)  
[Ver resumen gráfico en Español aquí](#)

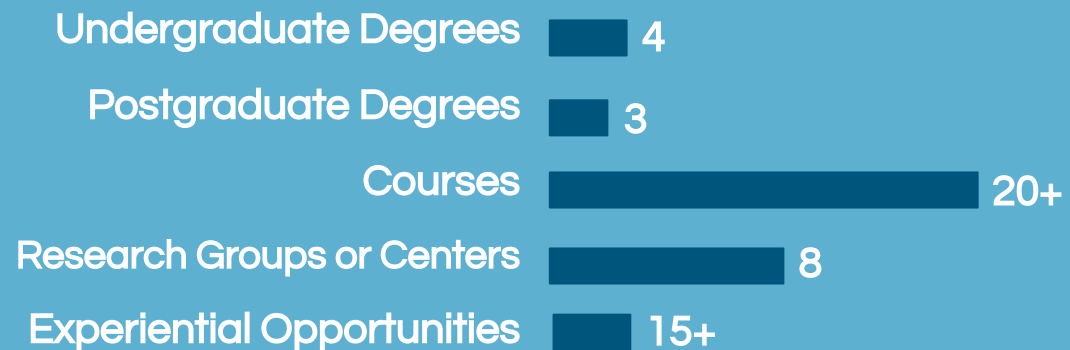




Engineering for Global Development (EGD) is an interdisciplinary practice that aims to improve the quality of life of underserved communities worldwide through the design and delivery of technology-based solutions combined with local capacity-building. To do this effectively, practitioners must integrate their technical training with an understanding of economics, entrepreneurship, social science and politics to benefit people living in poverty. Engineering education programs that support this definition are found at many institutions throughout Latin America. Program-specific aims and goals may be broader or further specialized than the definition presented here. Likewise, terminologies and titles vary - such as "Engineering for development", "Engineering for sustainable development", "Engineering for vulnerable communities" or "People's engineering"; among others. Regardless of a lack of terminology-consensus in this field, this report includes those programs that E4C has identified as supporting our overarching definition of "EGD."

### Disclaimer

To E4C's knowledge, this is the first report of this kind to attempt to list out all the programs and faculty who work in Engineering for Global Development. If you identify any programs or professors that you believe should also be included in this report, please email us at [info@engineeringforchange.org](mailto:info@engineeringforchange.org).



# EGD Degree Programs

## Postgraduate Degrees

Universidade Federal do Rio de Janeiro, Brazil  
Master in Technology for Social Development

Universidad del Valle, Colombia  
Master in Sustainable Development

Universidad de los Andes, Colombia  
Master in Specialization in Design and Social  
Management of technology



## Undergraduate Degrees

Universidad Nacional de Asunción, Paraguay  
Human ecology Engineering

Instituto Tecnológico Superior del Sur del estado de  
Yucatán, Mexico  
Engineering in Community Development

Universidad Autónoma de Chiapas, Mexico  
Engineering in Rural Development

Universidad Autónoma Tomás Frías, Bolivia  
Engineering in Rural Development

# Institutions with EGD offerings in Latin America

## Mexico

Engineering in Rural Development, Universidad Autónoma de Chiapas

Engineering in Community Development, Instituto Tecnológico Superior del Sur del Estado de Yucatán

## Guatemala

Makerspace/Design and Innovation for Development, Universidad del Valle

## Honduras

Evaluation Center for Improved Cookstoves, Universidad Zamorano

## Panama

Panama Flying Labs, Universidad Tecnológica de Panamá

## Colombia

Sustainable Development, Universidad del Valle

Engineers Without Borders, Universidad de los Andes & Corporación Universitaria Minuto de Dios

Ingenuity, Science, Technology and Society & Research Group on Technology and Innovation for Community Service, Universidad Nacional de Colombia

Engineering Projects for Community Service, Universidad de Antioquia

Technology and Society, Universidad de los Andes

Center for Humanitarian Engineering, Universidad Sergio Arboleda

## Brazil

Interdisciplinary Center for Social Development, Universidad Federade do Rio de Janeiro

## Perú

Rural Group & Rural Telecommunications Group, Pontificia Universidad Católica del Perú

## Bolivia

Engineering in Rural Development, Universidad Autónoma Tomás Frías

## Paraguay

Human Ecology Engineering, Universidad Nacional de Asunción

## Argentina

Institute for the Study of Science and Technology, Universidad Nacional de Quilmes

Engineers Without Borders Argentina, Universidad Tecnológica Nacional & Universidad Nacional de la Matanza

Popular Production and Innovation Program, Universidad Nacional del Mar del Plata

Community Engineering, Universidad de Buenos Aires

## Chile

Chile Flying Labs, Bernardo O'Higgins University

Indigenous Peoples Program, Universidad de Chile



**Want to learn more?**

To view the full list of researchers and centers, [click here for the full report.](#)

# 20+ EGD Courses

Curricular units of teaching that typically last one academic term.

Universidad Nacional de Colombia, Bogotá, Colombia  
Catedra, Ingenio Ciencia tecnología y Sociedad

Universidad de Antioquia, Colombia  
Engineering Projects for Community Service (EPICS)

Universidad de los Andes, Colombia  
Technology and society  
Technology and globalization  
History of Technology  
Systematic thinking tools  
Technocultures in Latin America  
History of Telecommunications in Colombia  
History of Engineering in Colombia

EWB, Universidad de los Andes,  
Universidad Minuto de Dios, Colombia  
Engineering and Social Justice  
Methodologies for engineering with impact  
Intermediate project course (in applied engineering to  
vulnerable community development)

Universidad del Valle, Guatemala  
Design and Innovation for development

Rural telecommunications group, Pontificia Universidad  
Católica del Perú, Peru  
Rural Telecommunications



Grupo Rural, Pontificia Universidad Católica del Perú,  
Peru

Technologies for ecological houses and hotels  
Design and selection of photovoltaic systems  
Construction of small water hammer pumps  
Rural electrification projects with solar energy  
Design and installation of lighting protection and its  
grounding

Indigenous Peoples Program, Universidad de Chile, Chile  
Indigenous elective courses

# 20+ EGD Courses

Curricular units of teaching that typically last one academic term.

Interdisciplinary Center for Social Development, Brazil  
 Participatory management  
 Social technology  
 Free software and participatory methodologies  
 Nutrition course focused on the development of  
 community gardens and their irrigation system  
 Introduction to CTS studies  
 (Science-Technologies-Societies)  
 CTS Studies: Brazilian and Latin American Approaches  
 History of computing  
 Computers and society

## Want to learn more?

To read about the researches and  
 research and Innovation centers,  
[click here for the full report.](#)



EWB Argentina, Universidad de Tecnológica Nacional,  
 Universidad Nacional de la Matanza, Universidad  
 Nacional de La Plata, Universidad Católica de  
 Córdoba, Universidad Nacional de General  
 Sarmiento, Argentina  
 Strategic management of social projects: towards  
 sustainable development  
 Sustainable development: tool for management  
 Diploma in energy and sustainable development



## 15 Institutions offering experiential opportunities

### Experiential opportunity examples

Experiential opportunities take place outside of a traditional classroom setting, such as fieldwork, internships, immersions, and study abroad.

**IEEE Special Interest Group on Humanitarian Technology (SIGHT) - Various Universities**

Volunteering programs in development

**Engineers Without Borders, Universidad de los Andes y Universidad Minuto de Dios (Colombia), Ingeniería Sin Fronteras Argentina (Argentina), Engenheiros Sem Fronteiras Brasil (Brazil), Universidad Católica Boliviana (Bolivia), Universidad San Francisco de Quito (Ecuador), Universidad Autónoma de Tamaulipas (Mexico)**

International seminar - conferences, workshops and field trips in relation to projects developed by EWB

**Flying Labs - Universidad Tecnológica de Panamá (Panamá) & Bernardo O'Higgins University (Chile)**

Global network of local knowledge hubs

**E4C Corps, Universidad Tecnológica de Panamá, Panama**

Volunteering programs in development



# EGD Research

In Latin America, 15+ professors at institutions of higher education are currently conducting EGD-related research. Research is defined as practices that systematically investigate EGD-related topics, which lead to new conclusions and developments.



15+ Professors



20+ Institutions

## Research & Innovation centers

- Evaluation center for improved cookstoves, Universidad Samorano (Honduras)
- Interdisciplinary Center for Social Development, Universidad Federade do Rio de Janeiro (Brazil)
- Flying Labs, Universidad Tecnológica de Panamá (Panama)
- Flying Labs, Bernardo O'Higgins University (Chile)
- Rural Telecommunications Group, Pontificia Universidad Católica del Perú (Peru)
- Rural group, Pontificia Universidad Católica del Perú (Peru)
- Institute for the Study of Science and Technology, Universidad Nacional de Quilmes (Argentina)
- Popular Production and Innovation Program, Universidad de Mar del Plata (Argentina)
- Center for Humanitarian Engineering, Universidad Sergio- Arboleda (Colombia)
- Research Group on Technology and Innovation for Community Development, Universidad Nacional de Colombia (Colombia)



Centers supported by the International Development Innovation Network (IDIN)

- Makerspace, Universidad del Valle (Guatemala)
- C-innova, Colombia - Independent from university
- Vila Nova, Brasil - Independent from university



**Want to learn more?**

To read about the researches and research and Innovation centers, [click here for the full report.](#)





# EGD Conferences

Some examples of conferences with EGD focus and/or EGD-related tracks. For more, [click here](#).

Encontro Nacional de Engenharia e Desenvolvimento Social - ENEDS  
(National Meeting of Engineering and Social Development)

Conferencia Internacional de Ingeniería, Justicia Social y Paz \\  
(International Conference on Engineering, Social Justice and Peace)

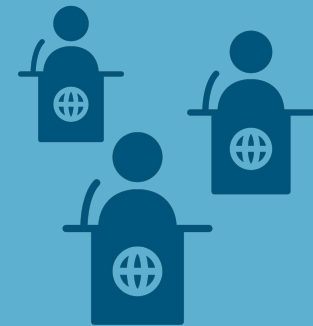
Mexican Humanitarian Technology Conference

Festival de Innovación y Tecnología Social - FITS  
( Festival of Innovation and Social Technology)

Encuentro Colombiano de Ingeniería y Desarrollo Social  
(Colombian Encounter of Engineering and Social Development)

Congresso Brasileiro dos Engenheiros Sem Fronteiras  
(Brazilian Congress of Engineers Without Borders)

International Development Design Summit (IDDS)



# EGD Regional Networks

Rede de Engenharia Popular Oswaldo Sevá - REPOS (Oswaldo Sevá Popular Engineering Network)

Red de Tecnologías para la Inclusión Social Argentina - redTISA (Argentinian Network of Technologies for Social Inclusion)

Red Latinoamericana y del Caribe de Cocinas Limpias -RLCCL (Latin American and Caribbean Network of Clean Kitchens)

Red Colombiana de Ingeniería y Desarrollo Social - ReCIDS (Colombian Network of Engineering and Social Development)

