



UNIVERSIDAD  
DE LA REPÚBLICA  
URUGUAY



SEDE TACUAREMBÓ



Campus Aprendizaje,  
Investigación e Innovación  
Ruta 5 km 386,5



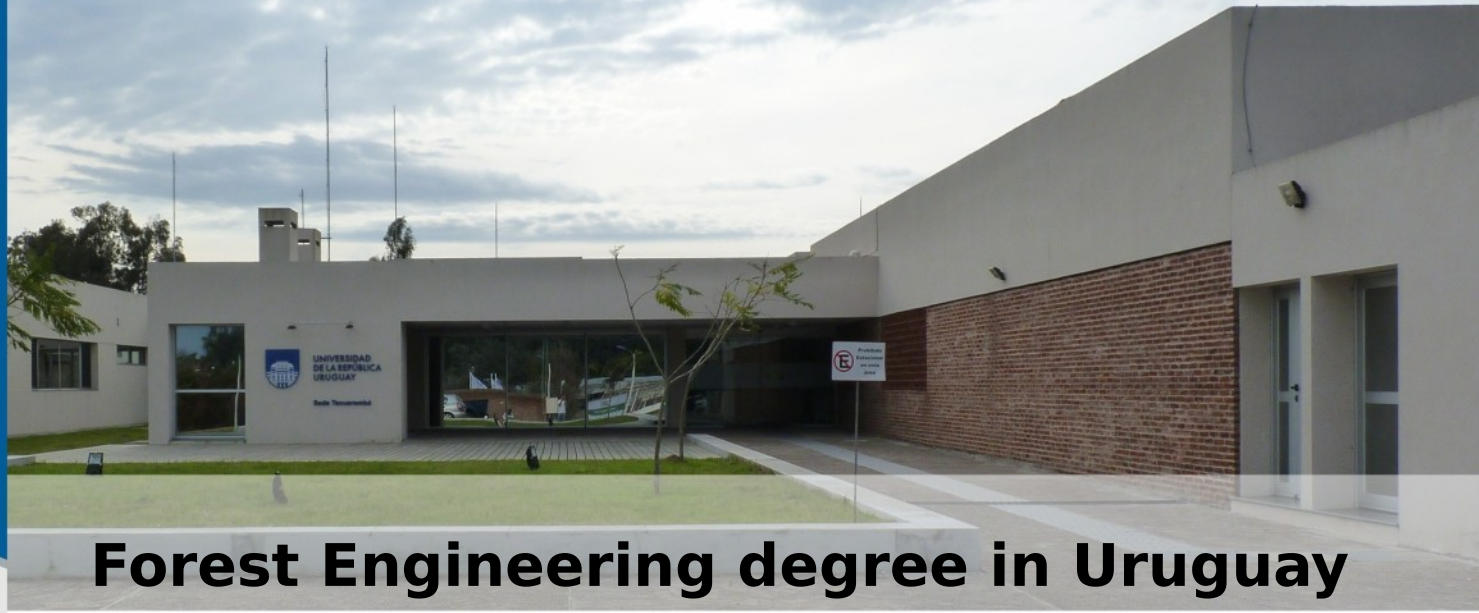
Sede Centro  
25 de Mayo 320



4632 3911 - 4633 3485



secretaria@cut.edu.uy  
www.tacuarembó.udelar.edu.uy



## Forest Engineering degree in Uruguay

Diego Passarella<sup>(a)</sup>

Carlos Mantero<sup>(a,b)</sup>

Fernando Ferreira<sup>(a,c)</sup>

Gabriel Pisciotano<sup>(d)</sup>

María Simón<sup>(d)</sup>

(a) University Center of Tacuarembó, Udelar

(b) School of Agronomy, Udelar

(c) School of Chemistry, Udelar

(d) School of Engineering, Udelar

# Outline



- History
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- Forest Engineering degree
  - Objectives
  - Curriculum
- Teaching staff
- Students
- First steps
- Final remarks

# History



## **Brief timeline of academic courses on forestry in Uruguay**

- 1959: Forestry department in School of Agronomy (FAGRO)
- Before 1962 just one course of silviculture in the Agronomy degree
- 1963: Agronomy Engineering specialized in forestry. Specific courses were given during the fourth year of the curriculum.
- 1979: Agreement with the University of Chile. Forestry specialization is extended to one more year of study.
- 1987/1988: Professors, students and alumni of FAGRO request the creation of Forestry Engineering. Request not accepted.
- 1989: Forestry specialization is overturned. Courses on forestry and wood technology can be selected.

# History



## **Brief timeline of academic courses on forestry in Uruguay**

- 2000: Proposal with the University of New Brunswick (Canada) to develop Forestry Engineering. Not funded.
- 2002: Talks between the Catholic University and starts a technical specialization on Forestry in Tacuarembó.
- 2005: Master degree on cellulose and paper between School of Engineering (FING) + FAGRO in Montevideo. With the support of the government of Finland and pulp companies.
- 2011/2012: Tertiary degree of wood technologist (FING+FAGRO) in Rivera. Decentralization of Udelar.
- 2013: Academic Council of Udelar approves the proposal presented by FAGRO+FING+School of Chemistry. Forestry Engineering starts in 2014 in Tacuarembó.

# Context



- 1987: Second Forestry law is approved.
- 1987: House of the Udelar in Tacuarembó.
- 2000: Balance of trade of wood and derivatives becomes positive.
- Between 2002 and 2006 the Udelar starts the analysis of decentralization of some courses and grades. Geographical, social and economic characteristics were taken into account.
- 2007: First academic courses of Udelar in Tacuarembó (Meat technologist). With the support of INIA and ANEP.
- 2008: The first pulp plant in Fray Bentos becomes operative.
- 2012: University Center in Tacuarembó. A Campus jointly operated with INIA and Ministry of Agriculture is set.

# Forest Engineering degree



## Objectives

To develop engineers with comprehensive knowledge of basic science, oriented to understand the development of forestry products from living trees to subsequent industrial processing.

The forestry engineer should master:

- Strong understanding of basic science.
- Comprehensive knowledge of trees as living organisms, methods and techniques of silviculture and understanding of forestry ecosystems.
- Extensive knowledge on processes of industrial manufacturing of forestry products, including the understanding of machinery and optimal criteria of operation.
- The use of practices of minimum environmental impact.

# Forest Engineering degree



## Objectives (cont.)

- Expertise to intervene the natural resources taking into account sustainable management.
- Ability to generate innovations based on scientific knowledge.
- To be able to work in multidisciplinary groups.

## Governance

The degree depends on the School of Engineering, School of Agronomy and School of Chemistry. Its ruling body is the Academic Committee of the grade, whose decisions have to be endorsed by the Academic Commissions of each School.

# Forest Engineering degree



## Curriculum

The degree is obtained once the student reaches at least 450 credits, distributed in a minimum value per area of knowledge. →

The Curriculum is defined by the student, supported by a professor and endorsed by the Academic Committee of the degree.

1 credit = 15 work hours

Area	Credits
Introduction	5
Basic Science	120
Bioscience	64
Forest ecology and silviculture	72
Industrial Processes	68
Management	52
Integrative activities	35
Total	416



# Teaching staff



Approximately 51 professors

Rank	Qty.	%
1	10	19.6
2	19	37.3
3	13	25.5
4	4	7.8
5	4	7.8
free	1	2.0

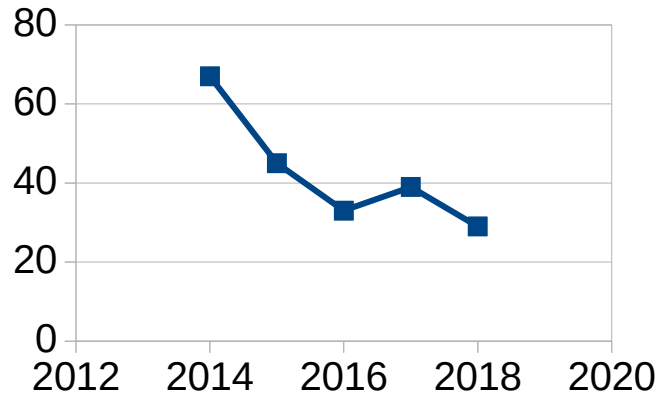
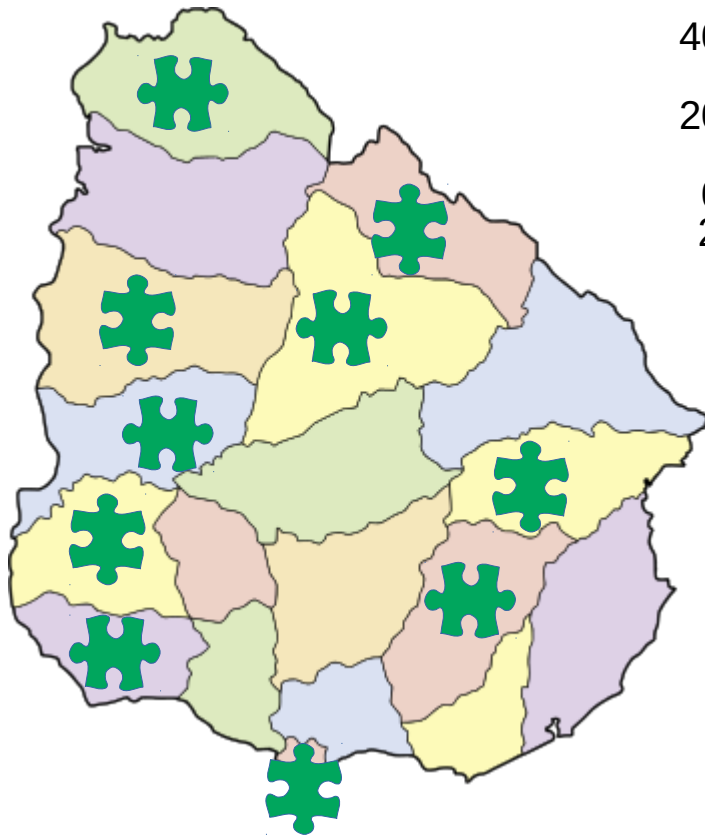
Academic level	Qty.	%
Bachellor	2	3.9
Terciary teacher	3	5.9
Grade	19	37.3
Master	12	23.5
PhD	15	29.4

39 professors are located at Tacuarembó and the remaining ones travel or use videoconference.

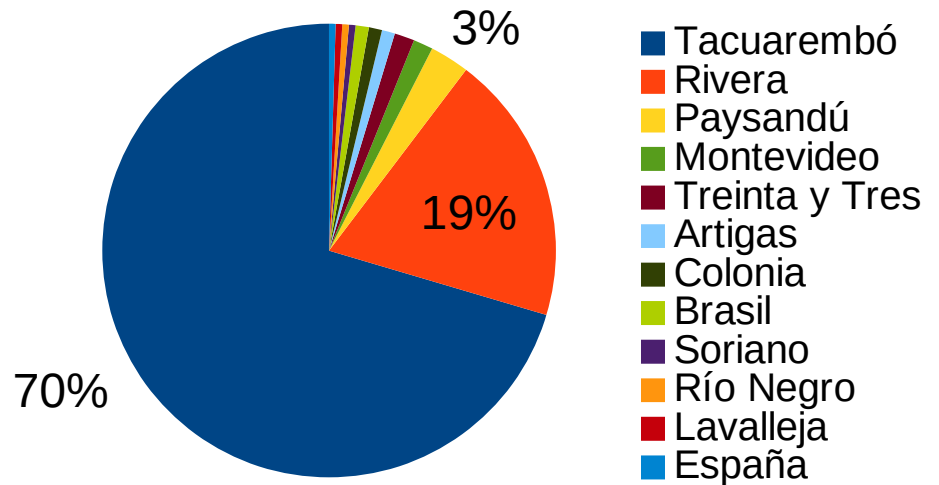
# Students



## Provenance



Enrollment evolution stable at approx. 30 new students per year



# First steps



- First courses start in 2014 with high enrollment of students
- Implementation of some basic science courses was delayed due to expected development of the Udelar the north-east region.
- The Academic Committee of the degree is set by professors of each School, students and alumni of agronomy.
- Due to the flexible curriculum, different generations of students take classes together. Some courses are shared with other degrees (development, administration, human biology, agronomy).
- The academic offer is completed by 2018.
- Approximately 50% of the students progress along the degree.
- The bylaw of the degree is being drafted.

# Final remarks



- The degree originates as a consequence of several attempts to systematize the teaching of forestry. It is supported and validated by three different Schools of the Udelar.
- There was a combination of regulatory, economic and institutional events that demanded and promoted the emergence of the degree.
- The first stage of implementation is completed. All areas of knowledge were covered.
- There is a group of students soon to start the integrative activities.
- The ratio professor/student is high and supported by several full time professors.
- The degree is selected by students from several regions of the country.



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# Questions



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4632 3911(FAX), 4632 1663, 4633 3485,  
4633 8073 y 4633 8074



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# Supplementary Information



Evolution of selected students

