



UNIVERSIDAD DEL BÍO-BÍO



WOOD SCIENCE EDUCATIONAL PROGRAMS THE SOUTH AMERICAN APPROACH

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Concepción Chile**

54TH INTERNATIONAL CONVENTION

**SOCIETY OF WOOD SCIENCE AND TECHNOLOGY (SWST)
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Overview



- INTRODUCTION
- WOOD AND FORESTRY PROGRAMS IN SOUTH AMERICA
- FINAL REMARKS





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INTRODUCTION

EXTEND OF FOREST AND OTHER WOODED LAND 2010

FROM: FAO 2011. Global Forest Resources Assessment 2010



Country/area	Land area ^a (1 000 ha)	Total (1 000)	Population 2008 ^b			GDP 2008 ^c	
			Density (Population / km ²)	Annual growth rate (%)	Rural (% of total)	Per capita (PPP) (US\$)	Annual growth rate (%)
Argentina	273669	39883	15	1.0	8	14303	6.8
Bolivia (Plurinational State of)	108438	9694	9	1.8	34	4277	6.1
Brazil	832512	191972	23	1.0	14	10304	5.1
Chile	74880	16804	22	1.0	12	14436	3.2
Colombia	110950	45012	41	1.5	26	8797	2.5
Ecuador	27684	13481	49	1.0	34	8014	6.5
Falkland Islands (malvinas) ^d	1217	3	n.s.	n.s.	0	35400	-
French Guiana	8220	220	3	2.8	24	-	-
Guyana	19685	763	4	-0.1	72	3064	3.0
Paraguay	39730	6238	16	1.8	40	4704	5.8
Peru	128000	28837	23	1.2	29	8509	9.8
Suriname	15600	515	3	1.0	25	7401	5.1
Uruguay	17502	3349	19	0.3	8	12744	8.9
Venezuela (Bolivarian Republic of)	88205	28121	32	1.7	7	12818	4.8
South America	1746292	384892	22	1.2	17	10446	5.4
World^e	13010509	6750525	52	1.2	50	10394	1.7



Global Forest Land



Forests cover 30% of the earth's surface

- 3.9 billion hectares
- Tropical - 47%
- Subtropical - 9%
- Temperate - 11%
- Boreal - 33%
- Plantations - 5% of the total



Legend

- Open and fragmented forest: Land covered by trees with a canopy cover between 10 and 40 percent and height of remaining (2 meters or less) or presence of forest and scrubland and the presence of forest, but not the total forest and forest plantations.
- Other land cover: All land not being a forest, agricultural land, bare land, urban areas, etc.



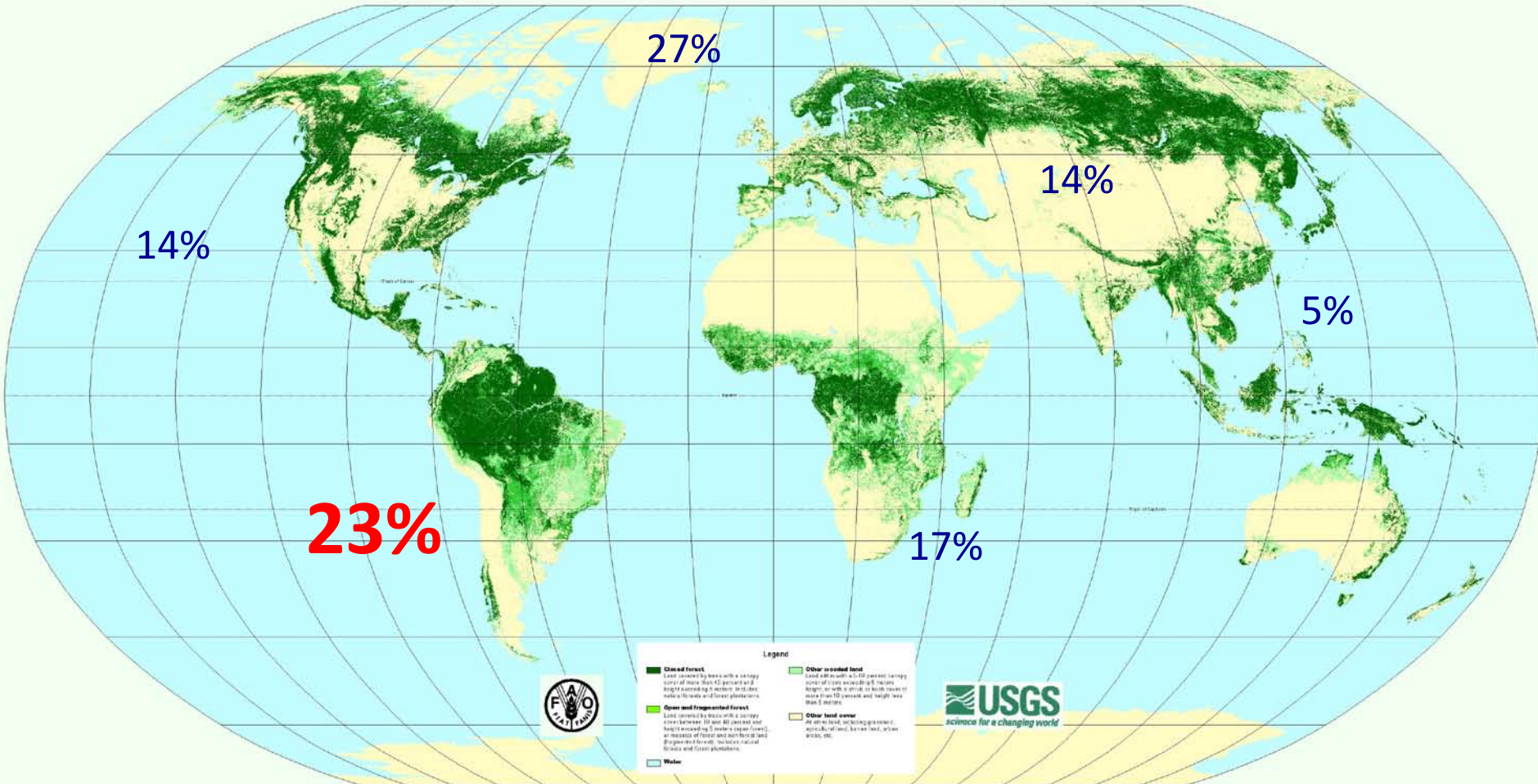
0 1000 2000 3000 4000 km

Scale: 1:40,000,000



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Global Forest Land





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Area

17 840 000 km²

(6 890 000 sq mi)

Population 385 742 554
(2008, 5th)

Pop. density 21.4 per km²
(56.0 per sq mi)



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SOUTH AMERICA



Surf.: 1 752 millions ha
Forest: 871 millions ha



Venezuela
29 223 000 hab.



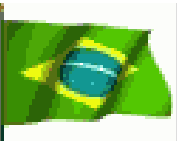
Colombia
45 986 000 hab.



Ecuador
14 306 876 hab.



Peru
29 461 933 hab.



Brazil
190 732 694 hab.



Bolivia
10 426 154 hab.



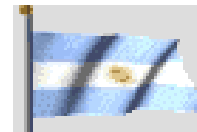
Paraguay
6 348 917 hab



Uruguay
3 356 584 hab.



Chile
17 231 000 hab.



Argentina
40 091 359 hab.





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WOOD AND FORESTRY PROGRAMS

IN SOUTH AMERICA



ESALQ - Escola Superior de Agricultura Luiz de Queiroz
FAEF - Faculdade de Agronomia e Engenharia Florestal de Garça
FAIT - Faculdade de Ciências Sociais e Agrárias de Itapeva
FAJAR - Faculdade Jaguariaíva
FARO - Faculdade de Ciências Humanas, Exatas e Letras de Rondônia
FIMES - Faculdades Integradas de Mineiros
FURB - Universidade Regional de Blumenau
IMMES - Instituto Macapaense de Ensino Superior
PUC-PR - Pontifícia Universidade Católica do Paraná
UDESC - Universidade do Estado de Santa Catarina
UEG - Universidade Estadual de Goiás
UEA - Universidade do Estado do Amazonas
UEAP- Universidade do Estado de Amapá
UEG - Universidade Estadual de Goiás UnU Ipameri
UEMA- Universidade Estadual do Maranhão
UEMS - Universidade Estadual do Mato Grosso do Sul
UESB - Universidade Estadual do Sudoeste da Bahia
UFAC - Universidade Federal do Acre
UFAM - Universidade Federal do Amazonas
UFCG - Universidade Federal de Campina Grande
UFES - Universidade Federal do Espírito Santo
UFERSA - Universidade Federal Rural do Semi-Árido
UFG - Universidade Federal de Goiás
UFMS - Universidade Federal do Mato Grosso do Sul
UFLA - Universidade Federal de Lavras
UFMT - Universidade Federal de Mato Grosso
UFMG - Universidade Federal de Minas Gerais
UFPI - Universidade Federal do Piauí

UFPA - Universidade Federal do Pará
UFPR - Universidade Federal do Paraná
UFRA - Universidade Federal Rural da Amazônia
UFRB - Universidade Federal do Recôncavo da Bahia
UFRRJ - Universidade Federal Rural do Rio de Janeiro
UFRPE - Universidade Federal Rural de Pernambuco
UFRB - Universidade Federal do Recôncavo Baiano
UFRN - Universidade Federal do Rio Grande do Norte
UFS - Universidade Federal de Sergipe
UFSC - Universidade Federal de Santa Catarina
UFSCar - Universidade Federal de São Carlos
UFSM - Universidade Federal de Santa Maria
UFT - Universidade Federal do Tocantins
UFV - Universidade Federal de Viçosa
UFVJM - Universidade Federal dos Vales do Jequitinhonha e
Mucuri
UNB - Universidade de Brasília
UNC - Universidade do Contestado
UNEMAT - Universidade do Estado de Mato Grosso
UNESP - Universidade Estadual Paulista
UNICENTRO - Universidade Estadual do Centro-Oeste do Paraná
UNIPAMPA - Universidade Federal do Pampa de São Gabriel RS
UNIR - Universidade Federal de Rondônia
UNOESC - Universidade do Oeste de Santa Catarina
UTAM - Universidade de Tecnologia da Amazônia
UTFPR - Universidade Tecnológica Federal do Paraná



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WOOD SCIENCE PROGRAMS IN BRAZIL



UNIVERSIDAD FEDERAL DE PARANÁ

Wood Engineering (5 years)

Master, Ph.D.

PhD

Postdoc





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UNIVERSIDAD FEDERAL DE PARANÁ

Forestry Science Department

UNDERGRADUATE PROGRAMS

Wood Industry Engineering

5 years

GRADUATE PROGRAMS

Master in Wood Science & Technology

2 years

Ph.D. Wood Science & Technology

3 years





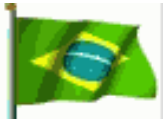
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USP - UNIVERSIDAD DE SAO PAULO

Wood Structure Engineering (5 years)

Master/Ph.D.



UNIVERSIDAD DE PIRACICABA

Wood Engineering (5 years)

Master



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WOOD SCIENCE PROGRAMS IN ARGENTINA



UNIVERSIDAD DE SANTIAGO DEL ESTERO

Wood Industries Engineering 5 years

Engineering of forestry 5 years

Ph.D in Forestry science



UNIVERSIDAD NACIONAL DE MISIONES ***

Engineering of forestry 5 years

Wood Industries Engineering 5 years

M.Sc. Forestry Science

M.Sc in Wood and Pulp and Paper



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WOOD SCIENCE PROGRAMS IN URUGUAY



UNIVERSIDAD DE LA EMPRESA

FORESTRY TECHNICIAN 2 years

Some topics of wood science and forestry can be seen it within the Agronomy and Architecture programs



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WOOD SCIENCE PROGRAMS IN COLOMBIA



Forestry Engineering 5 years
Forestry technology 2 years



Forestry Engineering 5 years



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WOOD SCIENCE PROGRAMS IN PARAGUAY



UNIVERSIDAD NACIONAL DE ASUNCIÓN

Engineering of forestry 5 years



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WOOD SCIENCE PROGRAMS IN ECUADOR



UNIVERSIDAD TECNICA ESTATAL DE QUEVEDO

Engineering of forestry 5 years



UNIVERSIDAD AGRARIA DEL ECUADOR

Engineering of forestry 5 years



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WOOD SCIENCE PROGRAMS IN BOLIVIA



Wood Industry Engineering 5 years





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WOOD SCIENCE PROGRAMS IN PERU



UNIVERSIDAD NACIONAL AGRARIA LA MOLINA

Engineering of forestry 5 years



Some others universities with forestry engineering programs

Universidad Nacional de Cajamarca (Cajamarca)

Universidad Nacional de la Amazonía Peruana - UNAP (Loreto)

Universidad Nacional de San Antonio Abad del Cusco (Cusco)

Universidad Nacional de Tumbes (Tumbes)

Universidad Nacional de Ucayali (Ucayali)

Universidad Nacional del Centro del Perú (Huancayo)



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WOOD SCIENCE PROGRAMS IN VENEZUELA



UNIVERSIDAD DE LOS ANDES

Facultad de Ciencias Forestales y Ambientales
Escuela Técnica Superior Forestal
Escuela de Geografía y Recursos Renovables
Escuela de Ingeniería Forestal



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WOOD SCIENCE PROGRAMS IN CHILE



UNIVERSIDAD AUSTRAL DE CHILE



Wood Engineering (5 years)

First program offered in 1998.

This program is closed for the moment.

According to the Council of Rectors of Chilean Universities (*Consejo de Rectores de las Universidades Chilenas, CRUCH*)

In 2007, 2008 and 2009 there were no applicants for this program.
Until today



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UNIVERSIDAD DE CHILE Wood Engineering (5 years) is within the Forestry Faculty

Now Forestry and Conservation Faculty

Offered for the first time in 1996

2007 and 2008 25 and 20 vacancies were offered. However only 1 and 14 applications respectively

Currently the program was closed According to the Council of Rectors of Chilean Universities (*Consejo de Rectores de las Universidades Chilenas, CRUCH*)

In 2007, 2008 and 2009 there were no applicants for this program They currently have 20 student registered.





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UNIVERSIDAD TECNOLÓGICA METROPOLITANA

Wood Industries Engineering (5 years)

Was created in 1994. During 2007 to 2009 the program provided an average of 32 vacancies. However, in 2008 and 2009 the number of students enrolled was only 18 and 29, respectively (CRUCH, 2007, 2008, 2009).

Today this university has completed its vacancies, but the national exam score required to be accepted in the program is going down.





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UNIVERSIDAD DE TALCA

Wood Industries Engineering (5 years)

It was created in 2000.

This program has been closed since 2005

At this point some students remain in the program to complete their bachelor thesis project (CRUCH, 2007, 2008, 2009)





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WOOD ENGINEERING DEPARTMENT

UNDERGRADUATE PROGRAMS UNTIL 2005

Forest Industries Engineering (6 years)

Wood Technology (4 years)

UNDERGRADUATE PROGRAMS SINCE 2006

Wood Industries Engineering (5.5 years)

GRADUATE PROGRAMS UNTIL NOW

Master in Wood Science & Technology

PhD WOOD SCIENCE AND INDUSTRY





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STUDENT ENROLLMENT 2002 From: Ballerini 2002

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- Forestry Industries Engineering : 180 students
 - Alumni : 166
- Wood Technology : 200 students
 - Alumni : 630
- Master in Wood Science & Technology : 25 students
 - Alumni : 6

STUDENT ENROLLMENT 2011

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- Wood Industries Engineering : 100 students
 - Alumni :
- New students March 2011 : 8





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CURRICULUM



FIRST LONG INDUSTRIAL INTERNS

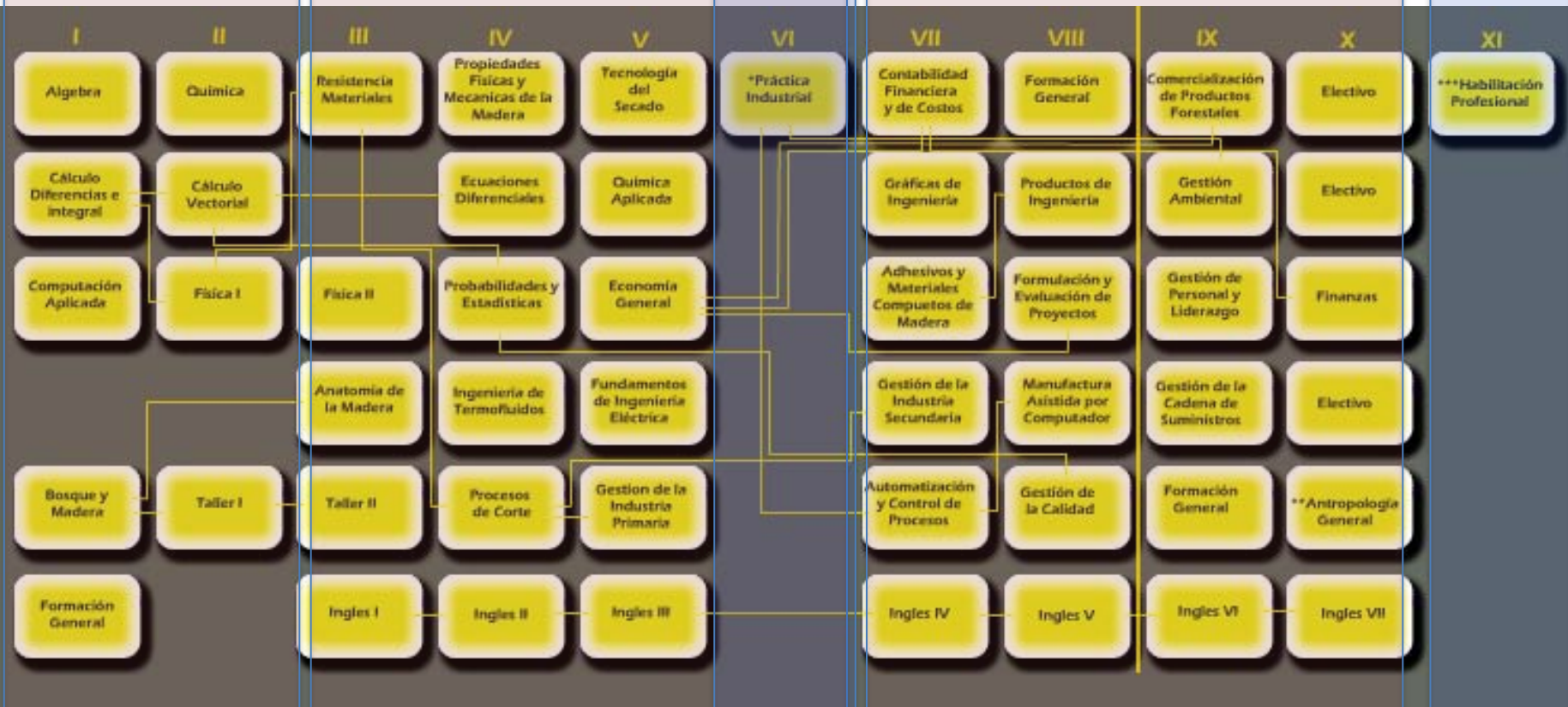
COORDINATION WITH THE GRADUATE STUDIES

INDUSTRIAL INTERN TO OBTAIN PROFESSIONAL DEGREE

BASIC SCIENCE CYCLE IN THE FIRST YEAR

WOOD SCIENCE AND ENGINEER SCIENCES

MANAGEMENT, TECHNOLOGY AND BUSINESS





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FINAL REMARKS



- Only two wood programs are currently active in Chile: UTEM in Santiago and UBB in Concepcion.
- There is a disparity in the offer of wood science & technology programs in South America.
- Brazil, Uruguay, Argentina, Colombia are the most interesting countries to increase the wood science programs within their universities.
- To avoid closing all programs in wood science, more marketing in the sustainable area and in the employability need to be carry out. Also including more general programs in process engineering.



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THANK YOU

PORTLAND, OR

JUNE, 2011