



**ACCESSIBILITY AND HARMONIZATION OF HIGHER  
EDUCATION IN CENTRAL ASIA THROUGH CURRICULUM  
MODERNIZATION AND DEVELOPMENT**

**Project № 561553-EPP-1-2015-1-BG-EPPKA2-CBHE-JP**

**ERASMUS+ Programme  
KA2 - Capacity-building in the Field of Higher Education**

**Coordinated by Burgas Free University**

**WP1 Research  
Dev. 1.1  
App. 8.3 Institutional Report – UPV, Spain**



Co-funded by the  
Erasmus+ Programme  
of the European Union

*This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*

Elaborated by	P3 – UPV (ES)
Work Package N° and title	WP 1: Analysis, Research and Creation of a Common Body of Knowledge
Deliverable N° and title	Dev. 1.1 App. 8.3 Institutional Report – UPV, Spain
Dissemination level Deliverable target group	PU Members of the consortium including EACEA and Commission services and project reviewers as well as all interested parties
Language	English

**INSTITUTIONAL SUMMARY REPORT – P3 UPV, Spain**

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**INSTITUTIONAL SUMMARY REPORT**

**A. General Information**

**COUNTRY:** SPAIN

**INSTITUTION:** UNIVERSITAT POLITÈCNICA DE VALÈNCIA (UPV)

**ADDRESS:** Camino de Vera 14, 64022 Valencia, Spain

**FACULTIES:**

1. *Faculty of Business Administration and Management*
2. *Faculty of Fine Arts*
3. *School of Agricultural Engineering and Environment*
4. *School of Architecture*
5. *School of Building Engineering*
6. *School of Civil Engineering*
7. *School of Design Engineering*
8. *School of Engineering in Geodesy, Cartography and Surveying*
9. *School of Industrial Engineering*
10. *School of Informatics*
11. *School of Telecommunications Engineering*
12. *Higher Polytechnic School of Alcoy*
13. *Higher Polytechnic School of Gandia*

**RELATED UNIVERSITY SERVICES:**

Academic Exchange, Alumni, Business Chair, Children's Summer School, Cultural Activities, Development Cooperation, Education Sciences, Language Centre, Employment, Environmental, Legal Office, Library and Scientific Documentation, Lifelong Learning, Research and Innovation Office, UNESCO Forum, University Ombudsman, UPV Press, Valencia Polytechnic City of Innovation, Vera Nursery,...

**B. Information related to Engineering and Engineering Trade Subject Area****I. Academic Programs in Engineering and Engineering Trade Subject Area**

Please, specify only Bachelor's and/or Master's Degree Programs which the university is expected to provide education in over the period of the Project (the next three academic years: 2015-18)<sup>1</sup>, with indication of the Area (see table) where the academic program should be considered.

Engineering	<b>Area 1</b> (covers all types of classical Engineering degrees including electrical, mechanical, electronic, agricultural, aerospace, civil, mine, telecommunication, computer, etc.)
Engineering Trade	<b>Area 2</b> (covers all types of general industrial Engineering degrees including design, logistics, management, business, etc.)

**Table 1. Description of Academic Programs in the field of Engineering and Engineering Trade**

Area	Name of the Academic Program	Educational degree provided <i>(Bachelor, Master)</i>	Form of study <i>(part- time, full- time, distant education)</i>
1	Bachelor's Degree in Forest and Environmental Engineering	BACHELOR	Full Time
1	Bachelor's Degree in Rural and Agrifood Engineering	BACHELOR	Full Time
1	Bachelor's Degree in Civil Engineering	BACHELOR	Full Time
1	Bachelor's Degree in Public Works Engineering	BACHELOR	Full Time
1	Bachelor's Degree in Aerospace Engineering (1) (2)	BACHELOR	Full Time
1	Bachelor's Degree in Chemical Engineering (1) (2)	BACHELOR	Full Time
1	Bachelor's Degree in Electrical Engineering (1)	BACHELOR	Full Time
1	Bachelor's Degree in Energy Engineering	BACHELOR	Full Time
2	Bachelor's Degree in Industrial Design Engineering and Product Development	BACHELOR	Full Time

<sup>1</sup>If the university does not offer academic programs in Engineering and Engineering Trade subject area, please, in Table 1 fill in academic programs whose program's curriculum includes courses/subjects related to Engineering Sciences.

Area	Name of the Academic Program	Educational degree provided <i>(Bachelor, Master)</i>	Form of study <i>(part- time, full- time, distant education)</i>
	Bachelor's Degree in Industrial Electronics and Automation	BACHELOR	Full Time
2	Bachelor's Degree in Industrial Organization Engineering	BACHELOR	Full Time
2	Bachelor's Degree in Industrial Technologies Engineering (2)	BACHELOR	Full Time
1	Bachelor's Degree in Mechanical Engineering (1)	BACHELOR	Full Time
1	Bachelor's Degree in Geomatic and Surveying Engineering (1)	BACHELOR	Full Time
1	Bachelor's Degree in Informatics Engineering (1) (2)	BACHELOR	Full Time
	Bachelor's Degree in Telecommunication Engineering (1)		
	Bachelor's Degree in Telecommunications Technology Engineering (1) (2)		
	Bachelor's Double Degree in Business Administration and Management + Telecommunications Technology Engineering (1) (2)		
	Bachelor's Double Degree in Degree in Business Administration and Management + Informatics		
1	Bachelor's Degree in Biotechnology	BACHELOR	Full Time
1	Bachelor's Degree in Environmental Sciences	BACHELOR	Full Time
1	Bachelor's Degree in Food Science and Technology	BACHELOR	Full Time
2	Bachelor's Degree in Audiovisual Communications	BACHELOR	Full Time
2	Bachelor's Degree in Business Administration and Management	BACHELOR	Full Time
2	Bachelor's Degree in Public Administration and Management	BACHELOR	Full Time
2	Bachelor's Degree in Tourism	BACHELOR	Full Time
	Bachelor's Double Degree in Business Administration and Management + Tourism		

## II. Current State of Education

Please, provide the following information for your university.

## II.1. Quality of the Program's Curriculum and the Teaching Programs. Provide the information for each general type of Bachelor Degree and Master Degree.

a) The indicators in this section refer to the Program's Curriculum. They aim to assess the consistency of the academic program with the requirements of the European higher education (please write down just the total length and the number of ECTS of each type).

Share of core (required), Compulsory Specialized subjects, specialized subjects, common and optional subjects, and elective courses included in the Program's curriculum. In the following table:

- **Type:** may refer to (bachelor/master/professional bachelor/academic bachelor, and similar categories in case you have such types of degrees at your university)
- **Area:** may refer to Area 1 or Area 2 as defined in B.1

**Table 2. Number of ECTS within each Type/area Degree**

TYPE/AREA	SUBJECT	NUMBER OF ECTS
Bachelor 1/2	BASIC COMPULSORY	60
Bachelor 1/2	CORE or COMPULSORY SPECIALIZED	
Bachelor 1/2	SPECIALIZED or RELATED	133
Bachelor 1/2	OPTIONAL OR ELECTIVE	35
Bachelor 1/2	Internship or training activities	
Bachelor 1/2	Final project or final dissertation	12
	<b>TOTAL PER TYPE OF DEGREE OR</b>	<b>240 ECTS</b>

TYPE/AREA	SUBJECT	NUMBER OF ECTS
Master 1/2	BASIC COMPULSORY	0-20-31,5-54-55-66
Master 1/2	CORE or COMPULSORY SPECIALIZED	
Master 1/2	SPECIALIZED or RELATED	
Master 1/2	OPTIONAL OR ELECTIVE	20-22,5-28,5-40,5-60
Master 1/2	Internship or training activities	0-6-8
Master 1/2	Final project or final dissertation	12-13,5-15
	<b>TOTAL PER TYPE OF DEGREE OR</b>	<b>60-75-90-120 ECTS</b>

b. Do you collect information on Program's curriculum, teaching programs, learning materials related to similar academic programs at European higher academic institutions (HEIs)?

Please, provide information about the ways to collect such data and give specific examples.

The standard procedure before a new degree is born is to start by studying and justifying the need of a degree in order to get approval from regional and Central Government.

This is done along with the proposal of the new degree which requires collecting data from other institutions. Thus European and in general external programs are always considered and consulted, via their websites.

Once in operation, there are a number of academic agreements with other institutions thus providing a continuous flow in all directions that keeps continuous update in curriculum, teaching programs and learning materials.

All our degrees are nationally accredited by ANECA (National Agency for Quality Evaluation and Accreditation) and some of them have additionally opted for ABET, EURO-INFO or EUR-ACE accreditation.

c. Share of the teaching staff with a doctoral degree/PhD (% of the full-time academic staff providing education at university or Faculty level) (average)

*80% the teaching staff holds a PhD degree. PhD is compulsory for all tenure and tenure track positions.*

d. Policy toward usage of modern approaches and methods of teaching

Please, give evidence on the usage of modern approaches and methods of teaching. Describe the policy for upgrading academic staff qualification. Mention specific actions taken such as seminars, workshops, training courses, etc. which aim to raise teachers' awareness of contemporary methods in higher education.

UPV Educational Sciences Institute within the university provides a number of courses in order to update the technological and pedagogical abilities of the teachers.

All faculty performance at educational and research level is measured. Some of the issues considered are the use of new technologies, educational platform, students' poll, courses taken, MOOCs developed, etc.

From 2013 to 2015: 80 MOOC editions have been launched by UPV (151 in Spain, 85 in UK,...), more than 150,000 students, more than 20,000 successfully fulfilling the courses

UPV MOOCs are offered through edX since January 2015.

There are free online courses in a variety of subjects. UPValencia courses are available at

<https://www.edx.org/school/upvalenciax>

and may be followed for free by students or they can choose to receive a verified certificate for a small fee.

As an example of successful experience we may mention a project to improve education in Honduras. By means of it an online introductory course was given to 300 Honduran teachers, and later they created more than 500 educational videos....

e. Existence of a Quality Assurance System at National level or International QAS followed. Please explain QAS, if any, to recognize degrees nationwide and follow up system, if any, to reaccredit degrees after being implemented for a given number of years.

ANECA (National Agency for Quality Evaluation and Accreditation) works nationwide and is the organism within the Spanish Ministry of Education, Culture and Sports in charge of recognizing and reaccrediting Spanish degrees.

f. Share of new courses (subjects) which have been introduced in the Program's curricula for the last 3 years (% of the total number of courses/subjects in the Program's curriculum)

*(Please, specify a number)*

15%, just the courses required because of the new Bologna structure, mostly at the master level since Bologna implementation started by 2009-2010. Most of courses/subjects came from an adaptation from previous programs.

g. Usage of contemporary references or bibliography recommended to students

Please, specify the approximate average number per University/Faculty/Department according with the data used at your university, specify which one.

**Table 3.**  
**Bibliography/references**

Share of core readings (references) issued over the last five (0-5) years (%)	Share of core readings (references) issued over the last ten (0 - 10) years (% of the	Share of the digital references in e-format (% of the total number of
15%	60%	10%

## II.2. ICT facilities and ICT based education

**II.2.a** This section aims to shed light on the usage of ICT-based facilities and teaching methods as well as the digital competencies of the teaching staff.

**Table 4. ICT facilities**

Indicator	Value
Teaching e-platform accessible to support general teaching activities	YES
On-line platform for non-presential education courses	YES
ICT lab facilities for students and percentage of students that access to them	YES
Number of software products used for educational purposes	More than 30
Access to Wi-Fi at the university campus	YES
Average share of academic hours per course/subject requiring usage of ICT- based teaching methods (i.e. computers and software, multimedia devices)	40%
Average share of academic hours per course/subject held in a computer lab	30%



<b>Average share of the teaching staff who regularly use ICT-based methods of teaching</b>	50%
<b>Type of e-learning devices used by teaching staff (i.e. personal computer, smartphones, tablets, etc.)</b>	Personal computer, tablet
<b>Devices used by students in classrooms (type of personal devices: i.e. laptop, smartphones, tablets, etc.)</b>	Laptop, smatphone, tablet
<b>E-learning materials (e-based content) based on e-platform (i.e. Moodle, Sakai, Caroline, etc.)</b>	Based on Sakai: tasks, blog, chat, materials, exams, etc.
<b>Web based learning-MOOCs</b>	YES
<b>Students evaluation methods</b>	Traditional exam, online tests, portfolio, one-minute questions, multiple choice tests, oral presentations, etc.
<b>Other non-traditional evaluation methods for transversal competences</b>	Interview and presentations

### III Digital Framework

1 Is your university following a strategic plan for Digital implementation? YES/NO. Describe it in max 700 words.

It does not appear in the 2015-2020 strategic plan, perhaps because it started earlier.

Digital era is fully implemented: Educational Platform POLIFORMAT is fully in use, based on the Sakai project, and developed within UPV enables full and standard use of digital technologies at UPV at all levels, all classes are equipped with video and have access to central computers, grades are given with electronic signature,....

2. Describe how your university develops its Digital Strategy in terms of Concerns and Key Actions during the last 2 years (i.e. training courses, sessions, workshops, financial assistance offered to academics for qualification upgrading, etc.):

**Table 5. Digital Framework**

	CONCERNS	KEY ACTIONS
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<b>Technology use by faculties, schools and University Services units CSUs of plans for technology use</b>	Fully implemented	Training Courses for novel lecturers
<b>Student experience and support in ICT use</b>	Fully implemented, Not a concern after 1 week at UPV	Introduction to UPV services before (1 <sup>st</sup> year) course starts
<b>Administrative Staff training and support in ICT use to improve the digital competence</b>	Fully implemented	Training Courses and Seminars for updating
<b>Faculty Staff training and support in ICT use to improve the digital</b>	Fully implemented	Training Courses for novel lecturers
<b>Library services. Research tools</b>	Fully implemented	Training Courses and Seminars for updating
<b>Technological support for assessment activities</b>	Fully implemented	Training Courses for novel lecturers
<b>MOOCs or online courses</b>	Available, Fully implemented	Training Courses for novel lecturers
<b>On-line services addressed to the students (class timetable, exam timetable, courses history, grades, digital library and etc.)</b>	Fully implemented	Introduction to UPV services before (1 <sup>st</sup> year) course starts

3. Describe the digital methodology used in your **Learning Environment, giving examples in different types of subjects related with the type of subjects described in B.1.**

**You should include a small explanation with the following information:**

- Type of ICT methodology used:** (i.e. Blended learning, flipped learning, face-to-face learning, gamming learning, partnering learning, etc.)
- Type of learning:** independent, collaborative, formally scheduled.
- Feedback:** student, faculty and administrative staff
- Digital facilities:** i.e. Meetings, seminars, conferences, exhibitions, social and community activities

<b>SUBJECT TYPE</b>		
BASIC COMPULSORY	Type of ICT: Type of Learning Digital facilities	<i>Blended learning, flipped learning, face-to-face learning Formally scheduled Lab Computers</i>
CORE or COMPULSORY SPECIALIZED	Type of ICT: Type of Learning Digital facilities	<i>Blended learning, flipped learning, face-to-face learning Formally scheduled</i>
		<i>Lab Computers</i>
SPECIALIZED or RELATED	Type of ICT: Type of Learning Digital facilities	<i>Blended learning, flipped learning, face-to-face learning Formally scheduled Lab Computers</i>

OPTIONAL OR ELECTIVE	Type of ICT: Type of Learning Digital facilities	<i>Blended learning, flipped learning, face-to-face learning Formally scheduled Lab Computers</i>
Internship or training activities	Type of ICT: Type of Learning Digital facilities	<i>In companies</i>
Final project or final dissertation	Type of ICT: Type of Learning Digital facilities	<i>Blended learning Independent Tutorial time</i>

Blended learning is standard at Universitat Politècnica de Valencia as digital technologies are fully implemented. Flipped classes are currently encouraged by UPV as a means of getting the students fully involved in their learning process so that they really become the main characters in the learning processes. Methodologies have consequently shifted and sometimes suffered drastic changes in this updating process.

#### IV. Competitiveness of Education

The goal is to assess the competitiveness of your university and the academic program at a national, regional and EU-wide level as well as its conformity with the labor market requirements.

1. Do you receive a feedback from students – current and former ones – about the quality of education in the academic programs? Please answer at university level, Faculties or by areas described in Table 1, according with the characteristics and data of your institution giving information about the ways for collecting such information (i.e. questionnaires, surveys; regular meetings with graduates; alumni associations, etc.). Present specific documents, if applicable. Summarize the results.

According to our previous 2007-2014 UPV Strategic, the permanent evaluation of the teaching of academic structures and teachers through objective indicators and evaluation systems should lead to the corresponding recognition of teaching excellence of teachers through pay incentives and promotion of his professional career.

Poll questionnaires are done anonymously by the students every year concerning clarity, exams, educational platform use, punctuality,...

Other relevant issues measures: Educational documents generated, text books, MOOCs, education conference papers, Classes delivered in English,....

2. Do you collect information from employers of your students about the quality of education and students' professional qualification and preparation? Please, give information about the ways for collecting such information (i.e. questionnaires, surveys; regular meetings with employers, employers' associations, labor market institutions, etc.). Present specific documents, if applicable. Summarize the results.

*There exist a number of reports on employers needs and labour market needs obtained through different stakeholders which include Chambers of Commerce, Employment offices at UPV.*

*There are Fairs for Employment displayed annually within UPV where companies and foreign bodies do show their needs and students can register and offer their CV.*

3. Student and teaching staff mobility per University/Faculty/Area described in table 1

<p>Total number of students per year over the last 2 years who have <u>studied</u> abroad (excluding the EU countries)</p>	<p><b>Per year, 160 outgoing students excluded EU:</b>  USA 56, China 13, Brasil 11, Japan 11, Mexico 11, Argentina 9, Australia 9, Canada 7, South Korea 6, Chile 6, Singapur 4, Peru, Ecuador, Taiwan, Costa Rica, India, Phillipines, Domenican Rep .</p> <p><b>Per year, 380 incoming students:</b> Mexico 97, USA 93, Brasil 39, Chile 32, China 21, Colombia 17, Argentina 19, Taiwan 10, South Korea 10, Canada 10, Australia 5, Uzbekistan 3, Uruguay 3, Costa Rica 3, Bolivia, Venezuela, Tunisia, Ukraine, Kazajistan, Japan,</p>
<p>Total number of student per year over the last 2 years who have <u>studied</u> in the EU</p>	<p><b>Per year, 1300 students sent to EU:</b>  Germany 201, Italy 163, Poland 147, Chech Rep 112, France 83, UK 74, Sweeden 73, Holland 44, Denmak 43, Belgium 43, Hungary 41, Ireland 39,...</p> <p><b>Per year, 1645 EU incoming students:</b>  Germany 293, Italy 247, France 239, Poland 155, Belgium 82, The Netherlands 56, Turkey 40, Austria 38, Sweden 38, United Kingdom 37,..</p>
<p>Total number of teachers per year over the last 2 years who have visited foreign academic institutions (excluding the EU countries) for the purposes of delivering lectures/seminars, conducting scientific research, project participation</p>	<p><b>Per year, 100 teachers:</b>  USA, Mexico, Cuba, Chile, Canada, Colombia,  Argentina, Ecuador, Peru, Japan, China, South Korea, Taiwan</p>
<p>Total number of teachers per year over the last 2 years who have visited academic institutions in the EU for the purposes of delivering lectures/seminars, conducting scientific research, project participation.</p>	<p><b>Per year, over 200 teachers from EU:</b>  France 38, Italy 29, Rumania 17, Germany 14, Belgium 14, UK 10, Switzerland 10, Portugal 8, Hungary 8, Finland 8, Chech Rep 7, Austria 6, Sweden 5, Denmark 4, Norway 4, Poland 4,...</p>

4. Employability of graduates. (Please provide information by University/Faculty/Areas as described in Table 1 if such data is known and available.)

The next two indicators estimate the degree of qualification mismatch for your graduates. Please, provide data on:

Share of graduates (% of the average total number of graduates per year) who over the last 5 years have started a job which require professional qualification and theoretical knowledge in the field of Engineering and Engineering Trade. These are students who work in accordance with their field of study/specialty (this indicator is related to the extent of horizontal qualification mismatch).

*90%. Crisis has made things difficult*

Share of graduates (% of the average total number of graduates per year) who over the last 5 years have taken working positions which require the same educational degree (i.e. bachelor or master) as that they possess. These are students who work in accordance with the educational degree acquired (this indicator is related to the extent of vertical qualification mismatch).

*90%. Crisis has made things difficult*

5. Education and training provided in a real-life working environment

5.1. Per areas described in table 1, please share the courses/subjects type for which part or all classes are conducted in a real-life working environment (i.e. companies, banks, factories, etc.)

*There are subjects called Industry Internships and Internship in Research Centers (4,5-6-9 ECTS)*

*For instance in Electronic Engineering, Mechanical Engineering, Electrical Engineering, Industrial Design, Aerospace Engineering and in some cases it is compulsory as in the Master of Maintenance.*

5.2. The average number of academic hours per course/subject conducted in a real-life environment

*As a Technical University the real-life situations are quite common and there are many field practices that are run off the classroom, around an average of 60 hours per year.*

5.3. Additional evidence on the practical orientation of the study and the practical training of students (i.e. internships during study, etc.).

*There exist academic recognitions of such practical training and there are a number of agreement with many local industries where students can develop such training.*

6. University – Business links

Please, provide information on participation of specialists, experts, entrepreneurs, etc. in the educational process and/or curricula development, if any. Specify the average share of lectures/seminars delivered by them (% of total academic hours per course/subject.)

In some degrees there are specialists that give a lecture on a weekly basis so that students can learn different labour possibilities from the very beginning. In other degrees, professionals or experts do participate or deliver specific subjects.

7. Does your university study the current tendencies and requirements of the labor market?

(Please, provide specific information about the ways to collect labor market data. Describe records, databases, analysis you prepare, if any.)

*There is a study done before each new degree starts. There is a follow up of labour market needs and students enrolment.*

8. Does your university/faculty offer or plan to offer joint degree programs with partner universities? (Please, provide general information about joint degree programs per area described in 1 with other universities in your home country or abroad, if any.)

There are double degree programs within:

- Different UPV degrees,
- UPV and Spanish universities
- UPV and European Universities
  - o Bachelor: Belgium, Denmark, Finland, France, Germany, Italy, Sweden, UK
  - o Master: Belgium, Denmark, Finland, France, Germany, Italy, Sweden, USA

There is a Bachelor Triple Degree Program involving UPV and universities from Italy and USA

9. Please, discuss the Lifelong Learning (LLL) policy of your institution such as students, alumni, company members, retired citizens, other actions.

There is a LLL centre (CFP) through which specifically meant courses are organized for:

- Students
- Alumni
- University faculty
- Secondary School teachers
- General Public
- Specific for Company and Educational Managers
- Specific for Foreign Companies/universities

There is a Senior University meant for adult people.

10. Future teaching methodologies and their implementation

Thinking about future students, current learning strategies followed by many of them before entering university, and ICT technologies:

Which key competences, skills and practices do you think that will be needed at university level to enhance students learning experience? Explain briefly under faculty staff, student and stakeholders' point of view.

The irruption in our households and normal life of haptic devices has introduced a discovery-driven learning to students and faculty staff should be aware of that.

We strongly believe that 2030 Engineering students will be able to create a net of ideas through debate and discourse, through quick pursuit, reflection and adjustment; and through the reconfiguration of new combinations to provide new solutions to new problems. Tactile, auditory and visual sense in just one finger tip, play an important role on the future skills of any learner, not only because make those goals affordable, but also because redefine learning with new perspectives and possibilities.

As HEIs, we should get ready for those students aware of their learning process; and learn how to motivate them through passion to achieve new talents. It is important to be ready for new abilities, capabilities and habits that slowly are filling the new brains used to haptic feedback.

In this sense the new skills will be:

- Creativity, Critical thinking
- Continuous Improvement Skills
- Problem Solving
- Risk assessment
- Confidence/Resilience
- Negotiation skills
- Sense of initiative and entrepreneurship
- Communication & Public engagement
- Global mindset
- Networking
- Leadership and Team work
- Project management
- Valorization and intellectual property
- Commercialization
- Knowledge transfer.