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# Let's unify it!

IES LA SENIA - PAIPORTA (VALENCIA)

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Erasmus+

# IES La Sènia



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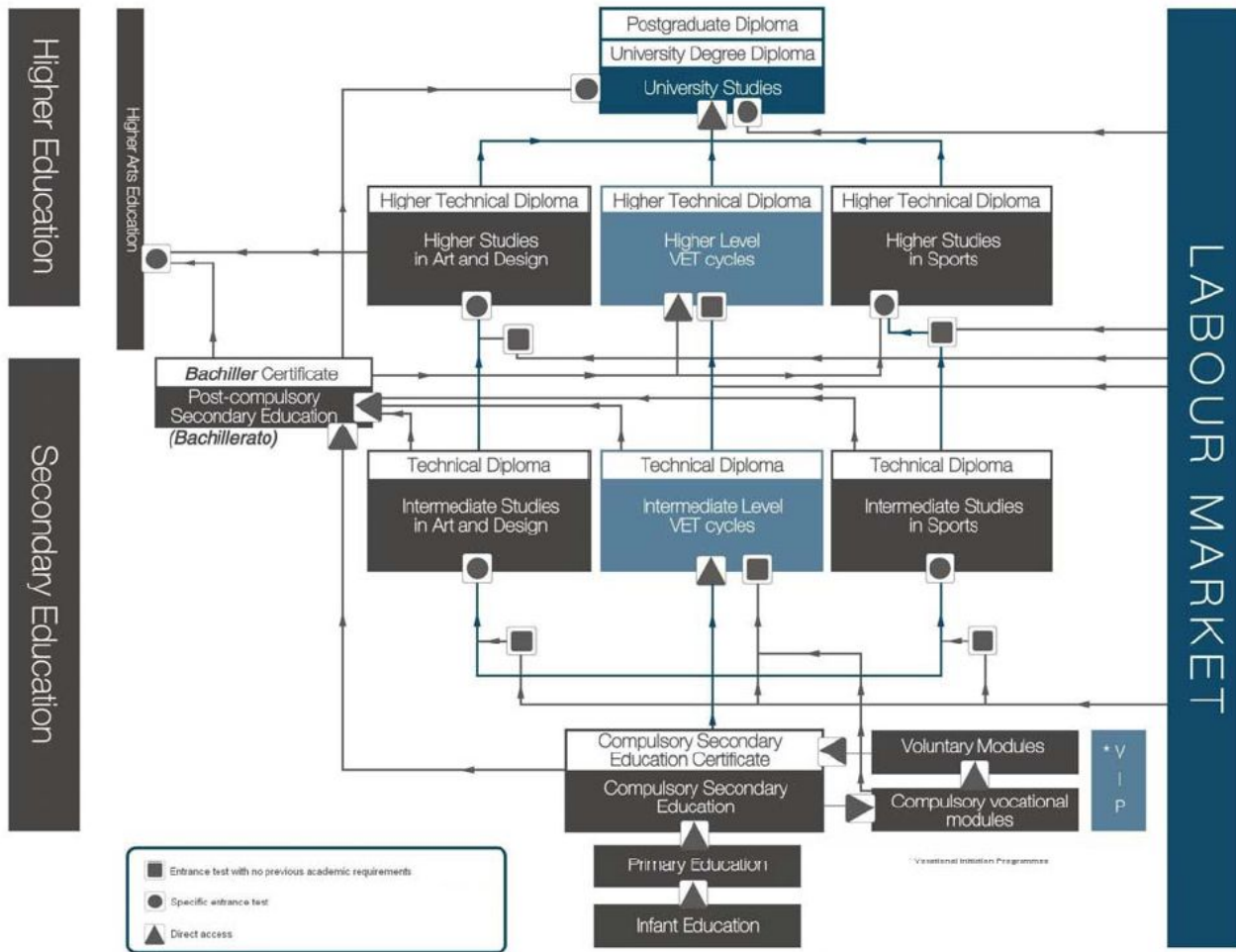
# IES La Sènia

- ❑ Foundation: 1985
- ❑ Public, free studies
- ❑ One of the first colleges in Spain to provide current degrees
- ❑ Number of students
  - ❑ 300 Secondary school
  - ❑ 210 VET
- ❑ 54 Teachers

# Degrees

- ❑ Compulsory secondary
- ❑ Post-compulsory secondary
- ❑ VET
  - ❑ Vocational Initiation Program (EQF 2)
    - ❑ Auxiliary operations in administrative and general services
  - ❑ Intermediate level VET cycles (EQF 3-4)
    - ❑ Administrative management
    - ❑ Microcomputer systems and networks
  - ❑ Higher level VET cycles (EQF 5)
    - ❑ Administration and finance
    - ❑ Development of web applications

# Spanish Education System



# Computer VET degrees in Spain

- Vocational Initiation Programmes
  - Computers and communications
  - Office computing
- Intermediate level VET cycles
  - Microcomputer systems and networks
- Higher level VET cycles
  - Development of web applications
  - Development of multiplatform applications
  - Computer network systems management

# Technician in microcomputer systems and networks

- ❑ 2 courses
- ❑ 2000 hours
- ❑ Age of our students:
  - ❑ From 16 to 22
- ❑ Number of students
  - ❑ First course: 24 students
  - ❑ Second course: 14 students
- ❑ Number of teachers: 6
- ❑ Timetable: 8:00-15:00
- ❑ 2 classrooms

# Occupations

## Technician in microcomputer systems and networks

- Technician in computer system installation-repair
- Computer systems technician
- Data networks technician
- Repairer of microcomputer systems peripherals
- Microcomputer sales representative
- Teleassistance operator
- Systems operator



# Subjects

Technician in microcomputer systems and networks



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- ❑ 1st course
  - ❑ Local networks
  - ❑ Single-user operating systems
  - ❑ Office Automation Applications
  - ❑ Assembly and Maintenance of Computers
  - ❑ Professional training and guidance
  - ❑ English
  
- ❑ 2nd course
  - ❑ Computer security
  - ❑ Network operating systems
  - ❑ Network services
  - ❑ Web applications
  - ❑ Business and entrepreneurial initiative
  - ❑ Internship
  - ❑ Integrated Project

# Local Networks

## Overview

- ❑ 1st course
- ❑ 3 terms
- ❑ 7 hours/week
- ❑ Course built upon CISCO CCNA Modules 1&2 (Introduction to Networks)
- ❑ Contents should be included in the unified curriculum

# Local Networks

## Main contents

- ❑ Local networks features
- ❑ Physical level
- ❑ Network level (IPv4 & IPv6)
- ❑ Internetworking devices
- ❑ Network simulation (Packet Tracer)
- ❑ Network devices installation and setup
- ❑ Network connection: Routers
- ❑ Integrated mixed networks

# Single-user Operating Systems

## Overview

- ❑ 1st course
- ❑ 3 terms
- ❑ 4 hours/week
- ❑ Windows/Linux OS
- ❑ Contents should be included in the unified curriculum

# Single-user Operating Systems

## Main contents

- ❑ Virtual machines (Virtualbox)
- ❑ Filesystems
- ❑ GNU/LINUX systems administration (Ubuntu)
- ❑ Shell Script (basic algorithms)
- ❑ WINDOWS Systems Administration (Windows 10)
- ❑ Boot Loaders

# Office Automation Applications

## Overview

- ❑ 1st course
- ❑ 3 terms
- ❑ 7 hours/week
- ❑ We miss a programming subject. Programming is introduced here with the help of macros.

# Office Automation Applications

## Main contents

- ❑ Text processors (LibreOffice)
- ❑ Spreadsheets (LibreOffice)
- ❑ Spreadsheet and text processor Macros (Microsoft Office)
- ❑ Presentations (Impress/Prezi)
- ❑ Image editor (GIMP)
- ❑ Cloud Office Software (Google)
- ❑ Databases (LibreOffice)

# Assembly and Maintenance of Computers

## Overview

- ❑ 1st course
- ❑ 3 terms
- ❑ 7 hours/week
- ❑ Future goal: Tablets repairing
- ❑ Should be taught in English
- ❑ Contents should be included in the unified curriculum



# Assembly and Maintenance of Computers

## Main contents

- ❑ Theory: structure, components, devices, controllers, expansion cards.
- ❑ PC and laptop building
- ❑ PC maintenance and repair
- ❑ Operating system installation
- ❑ Software tools (Hiren's BootCD)
- ❑ Occupational Risk Prevention
- ❑ Multimeter: parameters measurement and electrical units
- ❑ Market trends

# Computer Security

## Overview

- ❑ 2nd course
- ❑ 2 terms
- ❑ 5 hours/week

# Computer Security

## Main contents

- ❑ Basic security concepts
- ❑ Cryptography
  - ❑ symmetric
  - ❑ asymmetric
- ❑ Hardware security
- ❑ Backup and images
  - ❑ clonezilla
- ❑ Perimeter security
  - ❑ firewall
  - ❑ network mapper
  - ❑ vulnerability analysis
  - ❑ sniffers
- ❑ Malware

# Network Operating Systems

## Overview

- ❑ 2nd course
- ❑ 2 terms
- ❑ 8 hours/week
- ❑ Contents should be included in the unified curriculum

# Network Operating Systems

## Main contents

- ❑ Resource sharing
  - ❑ Samba
  - ❑ NFS
- ❑ PDC with Active Directory
  - ❑ mobile profile
  - ❑ GPO
  - ❑ Power shell
  - ❑ Hardware security
- ❑ PDC with LDAP
  - ❑ mobile profiles

# Network Services

## Overview

- ❑ 2nd course
- ❑ 2 terms
- ❑ 8 hours/week
- ❑ Contents should be included in the unified curriculum

# Network Services

## Main contents

- ❑ Network interconnection
- ❑ DNS and DHCP services
- ❑ Remote access
  - ❑ VPN
  - ❑ Tunneling
- ❑ HTTP and FTP services
- ❑ E-mail
- ❑ Wireless networks

# Web Applications

## Overview

- ❑ 2nd course
- ❑ 2 terms
- ❑ 3 hours/week



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# Web Applications

## Main contents

- ❑ HTML/CSS
- ❑ Javascript
- ❑ Content management systems (CMS)
  - ❑ Joomla
  - ❑ Moodle
  - ❑ Prestashop
  - ❑ MySQL connection

# Professional Training and Guidance

## Overview

- ❑ 1st course
- ❑ 3 terms
- ❑ 3 hours/week
- ❑ 'Student as a worker'
- ❑ Contents should be included in the unified curriculum

# Professional Training and Guidance

## Main contents

- ❑ **Labour laws**
  - ❑ Contracts
  - ❑ Salary
  - ❑ Work day
  - ❑ Insurance covers
    - ❑ Unemployment
    - ❑ Disease
  - ❑ Involvement of workers in business
- ❑ **Labour risk prevention**
  - ❑ Computer related risks and prevention
  - ❑ Emergencies and first aid
- ❑ **Work guidance**
  - ❑ Professional self-analysis
  - ❑ Work search
  - ❑ Curriculum vitae
  - ❑ Interviews
  - ❑ European work opportunities

# Business and Entrepreneurial Initiative

## Overview

- ❑ 2nd course
- ❑ 2 terms
- ❑ 3 hours/week
- ❑ 'Student as an entrepreneur'
- ❑ Contents should be included in the unified curriculum

# Business and Entrepreneurial Initiative

## Main contents

- ❑ Coming up a business
- ❑ SWOT analysis  
(strengths, weaknesses,  
Opportunities and  
Threats)
- ❑ The market & marketing
- ❑ Legal forms of business
- ❑ Ways to create a  
business
- ❑ Cost analysis
- ❑ Funding

# Internship

- ❑ 2nd course
- ❑ 3rd term (400 hours)
- ❑ Only after regular subjects have been passed
- ❑ Real business, full work day timetable
- ❑ Not paid
- ❑ Insurance included (free for the business)
- ❑ Previous agreement of students tasks
- ❑ Chief at business
- ❑ Follow-up from the college: monthly visit and continuous e-mail
- ❑ Contents should be included in the unified curriculum

# Integrated project

- ❑ 2nd course
- ❑ 3rd term
- ❑ The student chooses it
- ❑ The student develops it on its own with tutor guidance on his spare time after work day
- ❑ Evaluated only after internship has been passed
- ❑ Should integrate contents from all subjects and internship —achieved knowledge

# Essential subjects of the unified curriculum

- ❑ Technical
  - ❑ Networking
  - ❑ Operating systems
  - ❑ Programming (future)
- ❑ Work related
  - ❑ Professional training and guidance
  - ❑ Business and entrepreneurial initiative
  - ❑ Internship



# Evaluation proposals for the unified curriculum

- ❑ Students day-to-day evaluation should be mainly practical
- ❑ Formal students feedback at the end of each term
- ❑ Feedback of business after internships
- ❑ Former students follow-up is suggested as a way to improve and adapt the contents to the labour market

**See you at  
Valencia!**

