

INFORMATION ABOUT THE OPTIONAL SUBJECTS IN THE FIRST LEVEL OF BACHILLERATO

Here you can find a brief description of the different optional subjects one can find in the first level of bachillerato according to LOMCE.

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APPLIED ANATOMY

This subject has the aim of increasing the understanding of the human body from a general biological point of view, the acquisition of knowledge about healthy habits and the prevention of certain pathological processes.

Likewise, it will be very helpful to complement the training on human biology for all those students who want to head their university degrees and vocational training courses for the different scientific branches related to Human Biology, Health Science and Physical and Sport Activities.

Contents

1. The cell and tissues.
2. Nutrients and their function in our health maintenance.
3. The digestive system and digestion.
4. The cardiorespiratory system: heart, blood vessels, circulatory circuits. Blood: composition and functions.
5. The nervous system as a regulator of our organic functions.
6. The sense organs.
7. The locomotor system.
8. Anatomy and physiology of male and female reproductive system.

AUDIOVISUAL CULTURE I

This subject intends to initiate students in the making of images and audiovisual products, either static such as the photography or dynamic such as the video.

These contents are organised in four blocks:

Block 1. Image and meaning

- Image: functions and form.
- Audiovisual media: characteristics and evolution.
- Functions of the image.

Block 2. The fixed image and its expressive capacity.

- Photography.
- Photographic camera.
- Narration by means of fixed images (signs, comics, advertisements).
- Digital techniques in design: treatment of digital images.

Block 3. The image in movement and its expressive capacity.

- Perceptive basis of the image in movement.
- Technical characteristics of the cinematographic and videographic image.
- Attracting systems of images in movement.

Block 4. Audiovisual narrative.

- Narration of the image in movement. The shot and the sequence.
- The image shots. The camera movements.
- The cinematographic script. The synopsis. The sketch. The outline. The technical script. The story board.
- Audiovisual editing.
- Cinematographic genres.

SCIENTIFIC CULTURE

This subject consists of two sessions a week.

Its main objective is the knowledge, investigation, discussion and creation of one's own idea about a selection of scientific-technical issues which are considered interesting and socially important.

Due to its optional carácter and its offer for both the Bachelor of Humanities and Social Sciences and the Bachelor of Science, its approach to the issues is more qualitative than quantitative; leaving behind, everytime it is possible mathematical formulae and developments. The aim is to enable any student to read, listen to, understand, give an opinion about most news related to science nowadays.

The methodology consists of researching and participating as much as possible because the subject requires it and, in a way, it demands this work. Therefore, the assessment is carried out by means of projects that the groups of students must present in class helped by any digital means and handed out to the teacher.

The studied issues are established by the official curriculum although it is also considered the option of discussing in class any interesting topic related to current news that turn up in the press.

The thematic block are:

- Work procedures: a review and justification of the scientific method.
- The Earth and life. They are essential to know the origin of our universo as well as a procedure of experimental advance in science and life.
- Progresses in Biomedicine: modern medical trends will be presented as well as the most specific and least invasive treatments of important diseases for society.
- Genetic revolution: genetic manipulation in transgenic products, clonning, assisted reproduction, genetic treatments, etc.
- New communication and information technologies. It is essential to know the elements, their usage and dangers related to current CIT tools.

ENTERPRISING AND BUSINESSCULTURE

This is an optional subject in the first year of Bachillerato. It is focused on putting into practice all the innovative, enterprising and business capacities that can be developed.

The great social and economic change that is taking place nowadays makes clear that the creation of enterprises is a real and effective professional way. Thus, this subject is essential for the future because everybody ends up working in enterprises (as employees, employers or as civil servants or administrative assistant for the government).

This subject is very helpful as a complement to the subject "Enterprises Economy" in the second year of Bachillerato as well as preparatory to get access to a Higher Degree in Administration and Finance, to a degree at university (Law, Enterprising, Work Relationships) or to the labour world.

The main objectives can be presented as it follows:

1. Develop innovative, enterprising and and business capacities.
2. Know the economic and business context in a practical way builing an enterprise.
3. Put in practice the financial management of an enterprise (usage of banking activities, grants,...).

Due to its optional character, it will be taken into account the practical application of the studied concepts. The instruments that will be used in the classroom will be as follow: newspaper articles, specialised magazines, videos, documentaries and films related to the economic context that is going to be studied.

The assessment of this subject will be mainly based on the work developed by the students in class: attendance, active participation and realization of activities and projects.

ARTISTIC DRAWING I

The objectives of this subject are the following ones:

- Know and distinguish the basic elements of the shape configuration.
- Understand and represent the shape of objects considering their structure.
- Understand the different visual data of the shapes considering the proportion.
- Know the terminology, appropriate materials and techniques considering the realisation level.
- Know the theory of color for its plastic application.

The contents of the first year of Bachillerato are divided in three different blocks:

BLOCK 1. SHAPE

- Elements of configuration.
- Associated forms.

BLOCK 2. STRUCTURAL SYNTAX

- Composition.
- Representation of chiaroscuro.
- Color.

BLOCK 3. THE CONCEPT OF DRAWING

- Its importance in the History of Art.
- Introduction to the styles.

TECHNICAL DRAWING I

Technical drawing is used as a powerful communication tool in every research process or project that makes use of the visual aspect of ideas and shapes to visualize what is being designed and to define what one wants to produce in a clear and precise way, either in the graphic design, or the industrial one or the architectural one.

The contents of this level are structured in three blocks:

BLOCK 1. GEOMETRY AND TECHNICAL DRAWING

- Instruments and materials of technical drawings.
- Basic sketches in the plane.
- Regular polygons.
- Elementary geometrical transformations.
- Solution of basic problems related to tangencies and links.
- Construction of technical and conical curves.

BLOCK 2. REPRESENTATION SYSTEMS

- Projections.
- Diedric system.
- Axonometria: isometric projection.
- Cavalier projection.

BLOCK 3. STARNDARDISATION

- Formats.
- Scales.
- Projections: standardised lines.
- Limiting.

HISTORY OF THE MODERN WORLD

It is an essential subject, indispensable either for the students at the second year of Bachillerato or for university students.

Its objective is to analyze and explain the relevant facts, events and problems of contemporary history, locating them properly in their time and space as well as appreciating their impact in the process or their consequence in the present world.

Its contents deal with the essential facts of the 19th and 20th centuries.

ANDALUSIAN CULTURAL AND ARTISTIC HERITAGE

This subject is essential for those students who want to study some degree related to Humanities and Social Sciences.

Its objective is to know and appreciate the rich manifestations of our art and culture as signals of identity of Andalusia.

It will be presented in a practical and audiovisual way and it will include some aspects related to our natural, cultural and artistic heritage.

UNIVERSAL LITERATURE

The objective is to offer students a wide panorama of universal literature: the knowledge of key works in literature, starting from a chronological criterion and considering the most outstanding genres in every literary period.

The methodology and content of the subject have been organised in three basic axes where all the chosen texts are the protagonists since the main objective, apart from widening knowledge, is to wake up love for Reading:

- Theoretical explanation of the main literary trends and the detailed study of the most outstanding authors and their works. It is based on meaningful texts.
- Analysis and text commentary: the text is the main didactic resource, in such a way that the rest of the procedures and the exposed concepts are subject to this practice.
- Reading of full works (one per term) following some previous guidelines.

It is aimed to establish an interesting as well as a respectful and opened attitude towards the literary phenomenon, which must be understood not only as an individual manifestation but also as the expression of a community.

The tools to assess this attitude will be: the existence of a reading habit, the interest for present literature, the spoken or written explanation of how the reading of a literary work contributes to the personal enrichment, to the creation of a critical conscience and to a better understanding of reality.

INDUSTRIAL TECHNOLOGY I

CONTENTS BLOCKS:

1. Materials of technical use: extraction and production; environmental impact.
2. Energy sources and their efficient exploitation; consumptions analysis.
3. Processes of industrial design and production; machines, facilities and various systems.
4. Control and automation of machines and processes.

GENERAL METHODOLOGY:

Theoretical and conceptual study of contents using the textbook, realization of calculation activities and varied practices at workshop.

ASSESSMENT:

Exams and practical tests at the workshop.

WORK PATH:

Preparation for the study of different engineering degrees:

- Industrial
- Naval
- Aeronautics
- Computer Science
- Telecommunication
- Agronomist and of mountains
- Mines and public works

Preparation for the study of different higher degrees of Vocational Training:

- Agricultural activities
- Maritime-fishing
- Graphic arts
- Communication and image-sound
- Construction and civil works
- Electricity and electronics
- Production of mechanics
- Feeding industries
- Computer science
- Wooden and furniture
- Maintenance and production services
- Chemistry
- Textile and its manufacturing
- Glass and ceramic

Information and Communication Technologies (ICTs)

This subject consists of the following contents blocks:

Block 1. Information society and computers. Differences between what is considered information society and knowledge society. New economic areas as consequence of the generalization of information and communication technologies. Introduction to the computer science, its appropriate uses, etc.

Block 2. Computers architecture. Characteristics of subsystems that form a computer, interconnection of the functional blocks of a computer, massive storage devices, installation of operating systems and application programs to solve problems in personal computers. Structure of an operating system, relation between parts and functions.

Block 3. Software for informatic systems. Design of simple data basis. Text reports that integrate text and image, usage of spreadsheet generating textual, numerical and graphic results; design of graphic elements in 2D and 3D using programs for the edition of multimedia files. Realisation of short films integrating images and sound with programs of edition for multimedia files.

Block 4. Computers networks. Configuration of small local networks, comparative analysis between different types of wiring used in data nets and the wiring and wireless technology. Communication between the OSI levels of two distant computers.

Block 5. Programming. Write programs which include programming loopings to solve problems. Programming language. Realise simple application programs in a specific language. Realice small application programs in a specific language to be applied to real problems.

Every previously described block will be dealt with in a very practical way, in ICT classrooms equipped with a computer per student as well as with a very good Internet connection so that the learning will be individual and the teachers will be able to monitor the students' advance in every computer.

The didactic planning for the acquisition of competences will structure the elements of the curriculum around learning activities and tasks which allow the students to put into practice their knowledge in different contexts.

Volume

Objectives of the subject:

- To know the basic vocabulary, the most common specific materials and their expressive languages.
- To know and identify the basic tools and procedures, their usage and practical utility.
- To reflect upon the plastic aspects typical of works created in the workshop, locating them in the society and culture to which they belong.
- To develop artistic sensitivity as well as to appreciate the plastic aspects as a source of pleasure, knowledge and resource for the individual and community development.
- To make and interpret simple works, using the typical techniques of that workshop.
- To express creativity.
- To use the applications of the scientific and technological development.
- To recognise, in different samples of the Andalusian craftwork, the elements that define and characterize the production of the workshop to which they belong as well as to appreciate their value as a way of expressing popular culture.
- To show interest for the preservation and restoration of the historical heritage.

The contents of this level are structured in three blocks.

Block 1. Modelling

- Creativity in modelling.
- Duplication systems. The rigid mould.
- Plaster printing.

Block 2. Sculpting

- Composition. Low-relief. Systems of translation, extension and reduction.
- Duplication systems. The flexible mould.
- The finishing in the volumen. Texture and matter. Patin and polychromy.
- Free form. Modelling in three dimensions.

Block 3. Structural systems

- Analysis processes of tridimensional forms. Modular constructions.
- The concept of space. Volumetric form and space.