

Degree programme	Type	Course
Bachelor in Artificial Intelligence	FB	1

Contact lecturer

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Prerequisites

This is a first year and first semester subject, therefore, there are no prerequisites required.

Group languages

You can consult this information at the [end](#) of the document.

Objectives

The objective of this subject is to offer the students an overview of a computer system showing the different levels involved in the system software and the tools used for the development and maintenance of applications

Learning outcomes

- KM06 (Describe the basic principles of computer structure and operating systems.) Describe the basic principles of computer structure and operating systems.
- SM06 (Develop program design, coding, debugging, and testing using the appropriate tools to ensure software quality.) Develop program design, coding, debugging, and testing using the appropriate tools to ensure software quality.
- SM07 (Use the operating system management tools and development environments necessary for the implementation and deployment of software projects.) Use the operating system management tools and development environments necessary for the implementation and deployment of software projects.

Contents

- 1.- Introduction to computer systems (SW, OS, HW, virtualization)
- 2.- Interface User-Operating System (Linux, bash)
- 3.- Advanced tools (repositories, IDEs, C language)
- 4.- Basic introduction to Operating Systems

Learning activities and methodology

Title	Hours	ECTS	Learning outcomes
Practice	12	0.48	SM07

Theory	26	1.04	KM06
Study of the subject, preparation and implementation of problems and practices	94	3.76	KM06, SM06, SM07
Problems	12	0.48	SM06

Theory: The theory part of the subject combines sessions where the theoretical concepts of the subject will be introduced with hands-on sessions when the syllabus allows it. The detailed content of each session will be detailed in the planning of the subject that will be published on the first day of class in the Virtual Campus.

Problems: The problem part consists of analyzing and solving exercises in the classroom. The sessions dedicated to this teaching typology, as well as the content of each session, will be detailed in the planning of the subject that will be published on the first day of class in the Virtual Campus

Practices: The practical activity consists of solving practical projects in groups. These practical assignments will include different theoretical concepts introduced and worked on in theory and problem sessions. The sessions dedicated to practices and its content will be published in the Virtual Campus of the subject.

Competences

In this basic training subject, the following competence will be assessed:

- CT06. Demonstrate the personal and work skills necessary for the development of projects, participating in multidisciplinary teams with leadership capacity, cooperation, responsibility, autonomy and personal initiative.

These competences will be evaluated, mainly, in the sections of Problems and Practices. The objective of these activities is to pose problems of a certain complexity, which students must solve autonomously, interrelating different concepts explained in Theory. The proposed solutions must be argued. It is a question of reasoning how the proposed solution has been reached.

Annotation: within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Assessment

Continuous assessment activities

Title	Weight	Hours	ECTS	Learning outcomes
Practice	30	2	0.08	KM06, SM06, SM07
Theory/Problems Control 2	35	2	0.08	KM06, SM06, SM07
Theory/Problems Control 1	35	2	0.08	KM06, SM06, SM07

a) Scheduled assessment activities

Theory / Problems Control 1: 35% of the final grade;

Theory / Problems Control 2: 35% of the final grade;

Practices: 30% of the final grade;

The weighted average of the three type of training activities must be at least a grade of 5 in order to pass the subject. In addition, a minimum grade of 5 is required in the average of the two controls and a minimum grade of 5 is also required in the Practices.

Important Note: The teaching staff may request an interview or proof of validation of the Practices (lab) submitted by the student, when they consider it necessary. The result of the interview or validation test may invalidate the delivery, leaving a zero as a grade in that section and therefore the failing the course.

Regarding controls, reassessments and any evaluable activity, no student will be allowed to enter after 5 minutes from the start of the test/activity. Mobile phones cannot be used in the evaluative tests.

If the student does not pass the subject, the numerical grade of the record will be the lowest value between 4.5 and the weighted average of the grades.

b) Training activities schedule

The scheduling of the evaluation activities will be given on the first day of the subject and will be made public through the Virtual Campus. These dates may be subject to programming changes for reasons of adaptation to possible incidents; these changes will always be informed through the virtual campus since it is understood that this is the usual mechanism of exchanging information between lecturer and students.

c) Retake Process:

Those students who, having done the continuous assessment, have not achieved the minimum necessary to pass the subject, will have the option to retake one or two of the controls of the Theory / Problems part. The part of Practices, given its nature, cannot be retaken. The grades obtained in the retake(s) will be the final grades to be considered for the final grade of the course.

d) Procedure for qualifications review

For each evaluation activity, students who wish to do so may request a date and time to review the evaluation with the corresponding teaching staff. The request for review will have to be made on the days indicated for each activity, outside of that time the review cannot be scheduled.

e) Qualifications

In order to pass the course with honours, the final grade must be a 9.0 or higher taking into account the number of students enrolled in the course and bearing in mind the regulation of UAB.

Given that evaluation methodology is continuous assessment, the fact of presenting any training activity (exercises, tests, problems, control, practices ...) is interpreted as the intention of being evaluated on that subject and, therefore, the grade will be different than *Not Avaluable* (NA). An NA grade can only be obtained by not delivering evaluable evidences throughout the course

f) Irregularities by the student, copy and plagiarism

Notwithstanding other disciplinary measures deemed appropriate, and in accordance with the academic

regulations in force, assessment activities will receive a zero whenever a student commits academic irregularities that may alter such assessment. Assessment activities graded in this way and by this procedure will not be re-assessable. If passing the assessment activity or activities in question is required to pass the subject, the awarding of a zero for disciplinary measures will also entail a direct fail for the subject, with no opportunity to re-assess this in the same academic year. Irregularities contemplated in this procedure include, among others:

- the total or partial copying of a practical exercise, report, or any other evaluation activity;
- allowing others to copy;
- presenting group work that has not been done entirely by the members of the group;
- the unauthorized use of AI (for example Copilot, ChatGPT or equivalent) to solve any evaluable activity;
- presenting any materials prepared by a third party as one's own work, even if these materials are translations or adaptations, including work that is not original or exclusively that of the student;
- having communication devices (such as mobile phones, smart watches, etc.) accessible during theoretical-practical assessment tests (individual exams).

For this subject, the use of Artificial Intelligence (AI) technologies is permitted exclusively in support tasks, such as bibliographic or information searches, text correction or translations. The student must clearly identify which parts have been generated with this technology, specify the tools used and include a critical reflection on how these have influenced the process and the final result of the activity. The lack of transparency in the use of AI will be considered a lack of academic honesty and may lead to a partial or total penalty in the grade of the activity, or greater sanctions in serious cases.

In summary: copy, let copy or plagiarize (or attempt) in any of the evaluation activities, is equivalent to grade NO PASS, not compensable and without validation of parts of the subject in subsequent courses.

g) Single evaluation

This course does not contemplate the single evaluation system.

h) Rescheduling evaluation tests

In accordance with the regulations, students who cannot attend a Theory/Problem Control since it represents more than 20% of the final grade of the subject, are entitled to an assessable alternative test or activity in the following cases:

- Supervening medical situations that make it impossible to carry out the evaluation activity.
- Judicial matters with official summons.
- Attendance at official competitions.
- Death of a family member up to the second degree on the day of the exam or within four days prior to the exam date.
- Attendance at meetings of the collegiate bodies of university representation or other reasons provided for in the respective regulations.
- Participation in UAB mobility programmes.

As indicated in section 6 of the Regulations, the request for rescheduling must be sent to the Academic and Services Management of the School of Engineering, together with all the necessary documentation, within five calendar days prior to the date of the test and up to five calendar days immediately after.

Bibliography

"Computer Systems Design and Architecture" Vicent P. Heuring / Harry F. Jordan. Ed. Addison-Wesley

"Computer organization and architecture: principles of structure and function". William Stallings.

"Computer organization and design: the hardware/software interface". Patterson, David A ; Hennessy, John L.; Morgan-Kaufman

"Operating System Concepts", Avi Silberschatz, Peter Baer Galvin, Greg Gagne, Tenth Edition, John Wiley & Sons, Inc, April 2018, ISBN: 978-1-119-32091-3 (e-book)

"Operating Systems internals and design principles". William Stallings. Pearson 2018.

"Bash Guide for Beginners". Machtelt Garrels. eBook disponible a https://tecmint.tradepub.com/free/w_mach02/

"Pro Git". Scott Chacon, Ben Straub. Apress 2014. eBook disponible a <https://git-scm.com/book/es/v2>

"Advanced Bash-Scripting Guide". Mendel Cooper. eBook disponible a https://tecmint.tradepub.com/free/w_advb01/

"Autotools: A Practioner's Guide to GNU Autoconf, Automake, and Libtool". John Calcote. No Startch Press, San Francisco, 2010.

"Eclipse IDE Pocket Guide". Burnette, Ed. Sebastopol, CA : O'Reilly Media. 2005. [eBook]

"Sistemas operativos : una visión aplicada". Jesús Carretero Pérez [et al.]. McGraw Hill 2001.

"Introduction to Linux - A Hands on Guide". Machtelt Garrels. eBook disponible a https://linuxquestions.tradepub.com/free/w_mach01/

"Getting started with Ubuntu 16.04". The Ubuntu Manual Team 2016. Disponible a http://arbas.assam.gov.in/resources/pdf/ubuntu_16.04.pdf

Software

VirtualBox (virtualbox.org)

Ubuntu (ubuntu.com)

Git (<https://git-scm.com/>)

Course groups and languages

The information provided is provisional until November 30. After this date, you will be able to consult the language of each group through this [link](#). To access the information, you will need to enter the course CODE

Type of teaching	Group	Language	Semester	Shift
(TE) Theory	1	English	first semester	afternoon
(PAUL) Classroom practices	1	English	first semester	afternoon
(PLAB) Practical laboratories	1	English	first semester	afternoon
(PLAB) Practical laboratories	2	English	first semester	afternoon