

Degree	Type	Year
2500003 Business and Information Technology	OT	4

## Contact

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## Teaching groups languages

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

## Prerequisites

Since the course deals specifically with obtaining and organizing data, it is important to take into account, and refresh if necessary, the concepts introduced in the Database Analysis and Design compulsory course, especially in relation to SQL queries.

## Objectives and Contextualisation

The main goal of the subject is to introduce students to the set of tools and skills necessary to create useful and complete dashboards for strategic decision-making within an organization.

At the end of the semester, students should be able to:

- Collect and understand the information generated in business processes
- Structure the information to obtain a dimensional model that generates the Data Warehouse of the company
- Analyze the main Business Intelligence programs available in the market
- Use intensively one of the main Business Intelligence programs.

## Competences

- Capacity for working in teams.
- Demonstrating a comprehension of the business information systems, taking into account their three specific dimensions (informational, technological and organisational) and being active in the specification, design and implementation of said systems.
- Demonstrating a comprehension of the impact of the information systems on the decision making processes in different levels of organisations, searching and designing solutions to specific problems.
- Demonstrating creativity and initiative.
- Demonstrating the ability to plan in accordance to the objectives and available resources.
- Students must be capable of adapting to new situations and new knowledge that may lead to new analysis and different stances.
- Students must be capable of communicating information, ideas, problems and solutions to both specialised and non-specialised audiences.

## Learning Outcomes

1. Demonstrating a comprehension of the impact of the information systems on the decision making processes in different levels of organisations, searching and designing solutions to specific problems.
2. Demonstrating creativity and initiative.
3. Demonstrating the ability to plan in accordance to the objectives and available resources.
4. Efficiently managing storing, collecting and keeping the knowledge of the organisation.
5. Implementing treatment methods in order to obtain relevant information in the strategic decision making of the organisation.
6. Students must be capable of adapting to new situations and new knowledge that may lead to new analysis and different stances.
7. Using the more effective and up-to-date technical means in oral and written communication.
8. Working in teams, sharing knowledge and communicating it to the rest of the team and the organisation.

## Content

1. Business Intelligence, Data Warehouse and Dimensional Model
2. Dimensional model applied to different business processes (transactions, sales, inventory, accounting, order management, electronic commerce, ...)
3. Tour of the Processes and Tasks of the ETL system (Extraction, Transformation, and Load)
4. Business Intelligence programs
5. The representation of the data: metrics, KPI, good visualization practices, ...
6. Creation of effective dashboards
7. Integration of Databases at the Dimensional level
8. Big Data and its implications in the BI

## Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Laboratory classes	15	0.6	2, 3, 4, 5
Lectures, discussion of cases and presentation of works	30	1.2	1, 2, 3, 4, 5, 6, 7, 8
Type: Supervised			
Tutorials and follow-up of the work to be done and the cases to prepare	15	0.6	1, 2, 3, 4, 5, 6
Type: Autonomous			
Related readings, preparation of cases and practices, study and elaboration of schemes	87	3.48	1, 2, 3, 4, 5, 6, 7, 8

The subject uses PBL (problem based learning) as methodology throughout the course, and, whenever possible, based on real challenges (*challenge based learning*) of companies or entities. Using this methodology, the teachers of the subject provide resources (readings, videos, podcasts, ...) so that the students can apply them to business intelligence projects.

Time in class is divided between the theory applicable to the specific tasks of business intelligence and its practical application. Both individual practical exercises and a Business Intelligence Project are proposed within the course. The BI Project consists of the proposal and development of a set of dashboards based on the real data of a company. Furthermore, group and individual tutoring sessions are held to solve doubts and guidance in the preparation and execution of the project.

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

### Continous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Delivery and participation of the activities carried out in the classroom	20%	0	0	1, 2, 3, 4, 5, 6, 7, 8
Individual tests and final test	40%	3	0.12	1, 2, 3, 4, 5, 6, 7, 8
Realization of a Business Intelligence project	40%	0	0	1, 2, 3, 4, 5, 6, 7, 8

The final grade of the subject is the result of a continuous assessment formed by:

1. Participation and delivery of the activities carried out in the classroom.
2. Completion of a Business Intelligence project, which covers a large part of the course, and which is divided into 3 parts:
  - a) Search for an operational database of a company and development of the dimensional model.
  - b) Definition of the most appropriate management indicators and the most appropriate display.
  - c) Presentation of dashboards with an appropriate software.
3. Individual tests carried out throughout the course and on the date set by the Faculty.

The final grade of the subject will be determined from the weighted sum of the assessments of each of the three previous components, using the following calculation:

$N = 20\%$  (Participation and delivery of individual activities) +  $40\%$  (Completion of a BI project) +  $40\%$  (Individual tests)

It will be a necessary condition to calculate this value: (1) Attendance and participation in a minimum of 60% of

the planned activities during the semester (component 1), and (2) obtain a minimum average rating of 4.5 in the set the individual tests (component 3).

Important notes:

- In the case of not passing the subject due to one of the components of the evaluation not reaching the minimum required, the numerical grade of the file will be the lower value of 4.5 and N. If it is equal to or greater than 3.5, the student will be able to take the make-up test.
- A student will be considered "Not assessable" in the subject, if he informs the teacher that he leaves the subject before week 7 of the course.
- This subject/module does not provide the option for comprehensive evaluation.

Calendar of evaluation activities

The dates of the evaluation activities (exercises in the classroom, assignments, ...) will be announced well in advance during the semester.

The date of the final exam is scheduled in the assessment calendar of the Faculty.

*"The dates of evaluation activities cannot be modified unless there is an exceptional and duly justified reason why an evaluation activity cannot be carried out. In this case, the degree coordinator will contact both the teaching staff and the affected student, and a new date will be scheduled within the same academic period to make up for the missed evaluation activity."* **Section 1 of Article 115. Calendar of evaluation activities (Academic Regulations UAB).** Students of the Faculty of Economics and Business, who in accordance with the previous paragraph need to change an evaluation activity date must process the request by filling out an Application for exams' reschedule

[https://eformularis.uab.cat/group/deganat\\_feie/application-for-exams-reschedule](https://eformularis.uab.cat/group/deganat_feie/application-for-exams-reschedule)

Grade revision process

After all grading activities have ended, students will be informed of the date and way in which the course grades will be published. Students will be also be informed of the procedure, place, date and time of grade revision following University regulations.

Retake Process

*"To be eligible to participate in the retake process, it is required for students to have been previously been evaluated for at least two-thirds of the total evaluation activities of the subject."* Section 3 of Article 112 ter. The recovery (UAB Academic Regulations). Additionally, it is required that the student to have achieved an average grade of the subject between 3.5 and 4.9.

The date of the retake exam will be posted in the calendar of evaluation activities of the Faculty. Students who take this exam and pass will get a grade of 5 for the subject. If the student does not pass the retake, the grade will remain unchanged, and hence, the student will fail the course.

Irregularities in evaluation activities

In spite of other disciplinary measures deemed appropriate, and in accordance with current academic regulations, *"in the case that the student makes any irregularity that could lead to a significant variation in the grade of an evaluation activity, it will be graded with a 0, regardless of the disciplinary process that can be instructed. In case of various irregularities occur in the evaluation of the same subject, the final grade of this subject will be 0"*. **Section 10 of Article 116. Results of the evaluation. (UAB Academic Regulations).**

In this sense, any delivery that is identified plagiarized by other colleagues or any other source entails a zero in that evaluation. In case of plagiarism between classmates, the zero will be as much for the plagiarist as for the one that facilitates the plagiarism.

## Bibliography

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Wade, Ryan (2020): Advanced Analytics in Power BI with R and PythonIngesting, Transforming, Visualizing, Apress Berkeley, CA, Accés:<https://link.springer.com/openurl?genre=book&isbn=978-1-4842-5829-3>

## Software

Specific BI software, such as Power BI or Tableau, always in appropriate educational versions.

## Language list

Name	Group	Language	Semester	Turn
(PLAB) Practical laboratories	201	Catalan	second semester	afternoon
(TE) Theory	20	Catalan	second semester	afternoon