



UNIVERSITAT  
POLITÈCNICA  
DE VALÈNCIA

## Educational Data Analysis

ACADEMIC WORK REPORT

### Data Sources

Gintare Akramaite  
Juras Lukasevicius  
Daniele Borghesi

ACADEMIC YEAR 2023-2024

# Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
<b>2</b>	<b>General dashboard</b>	<b>1</b>
2.1	Indicators and corresponding charts . . . . .	1
2.2	Design . . . . .	1
<b>3</b>	<b>Specific course dashboard</b>	<b>2</b>
3.1	Indicators and corresponding charts . . . . .	2
3.2	Design . . . . .	3

# 1 Introduction

In this academic work, we focused on creating a digital dashboard for the students to track their academic achievements, coursework, and academic activity. We've focused on making the dashboard practical and simple for the student to use. In our case, we acquire data from two main sources: the student's online educational environment and the student's logged academic performance. The dashboard is split into two sections: a general dashboard and a specific course-dedicated dashboard. Both are described in detail in the following report.

## 2 General dashboard

Here we will describe the indicators shown to the students on the general dashboard, alongside their corresponding charts. The general dashboard shows information about the student regarding all subjects combined.

### 2.1 Indicators and corresponding charts

1. **General average of all grades** – this indicator displays the student's average grades for all the courses combined. Alongside the average, you can see how good are you compared to other students in your group.

This indicator is accompanied by a line chart, showing how your average changes over time. It consists of two lines: one line represents the group average and the other – the group average.

Besides averages, here you can also find your grade distribution bar chart (how many grades of any kind you've gotten throughout the academic year).

2. **General missing credits** – this indicator informs the student about the chosen and missing credits for the academic year. With it, the student can keep track if he has passed all the required courses for the academic year and add any if missing.

This indicator is displayed in two donut charts: one showing the credit situation for the entire career, and one for the situation relative to the ongoing academic year.

3. **Assignments tracker** – this indicator informs the student about uncompleted assignments in all the courses. It shows the number of assignments still not uploaded and what type of assignments they are. This is useful for students to keep in mind what work they still have to perform.

4. **Exam dates tracker** – this indicator simply shows the upcoming exams and midterms for the student over all the courses. It shows the date and the subject of the upcoming exam. When clicked, it also shows the suggested material for rehearsal.

5. **Possible results prognosis** – this indicator shows, what could be the possible maximum and minimum grade average the student can receive. It calculates it by inputting the best and worst possible results for the remaining assignments and exams and shows what could be the outcome. This indicator can be a good motivator for a student to find out what he can still accomplish during the academic year.

6. **Time spent on the platform** – this indicator informs the student about his activity on the e-studying platform. It shows the average time a student spends on the platform all together every week.

This indicator also comes with a bar chart, showing how much was spent every single week. The bars are also segmented by the student's courses, so the student can view which course was focused on more every week.

### 2.2 Design

Here you can find the visualization of the general dashboard complete with all the charts for our chosen indicators.

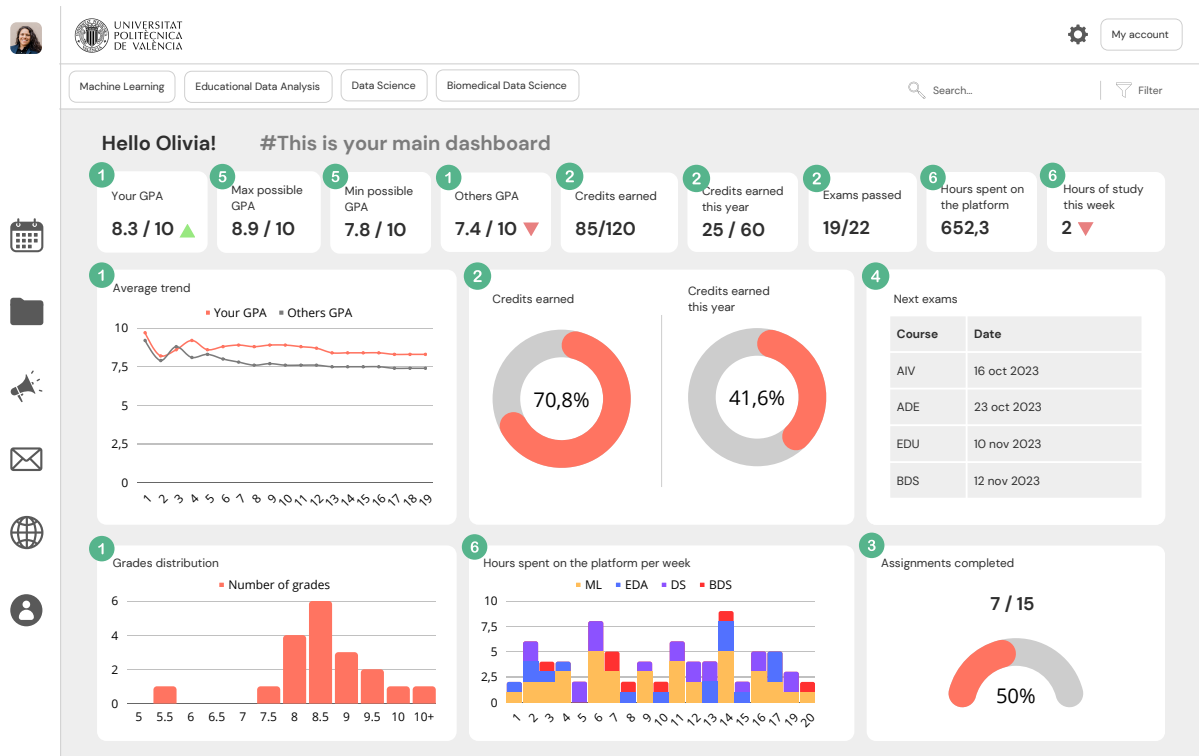


Figure 1: Design of the general dashboard

### 3 Specific course dashboard

Here we will describe the indicators shown to the students on the single course dashboard, alongside their corresponding charts. The single course dashboard shows information about the student regarding one specific course.

#### 3.1 Indicators and corresponding charts

1. **Grade of the course** – This indicator displays the student's grade for a specific course. Alongside it, you can see how good are you compared to other students in your group

This indicator is accompanied by a line chart, showing how your grade changes over time. It consists of two lines: one line represents the student's grade and the other – the group average.

Besides averages, here you can also find your grade distribution bar chart (how many grades of any kind you've gotten throughout the academic year).

2. **Assignments tracker** – This indicator informs the student about uncompleted assignments in a chosen course. It shows the number of assignments still not uploaded and what type of assignments they are. This is useful for students to keep in mind what work they still have to perform.
3. **Attendance tracker** – this indicator displays the percentage of attended classes. It is useful for courses with mandatory attendance.
4. **Exam date tracker** – this indicator simply shows the upcoming exams and midterms for the student in a specific course. It shows the date and the type of the upcoming exam. When clicked, it also shows the suggested material for rehearsal.
5. **Next lessons reminder and course progress tracker** – this indicator shows, when is the upcoming lessons for the course. It shows the type of the class and the date. When the lesson is pressed, students can see the location of the lesson. The course progress indicator informs the student about the chosen course progress for the semester. With it, the student can keep track of how much time is left of the semester.

6. **Consulted resources tracker** – this indicator shows how many of the given resources for the course did student studied.
7. **Possible results prognosis** – this indicator shows, what could be the possible maximum and minimum grade the student can receive. It calculates it by inputting the best and worst possible results for the remaining assignments and exams and shows what could be the outcome. This indicator can be a good motivator for a student to find out what he can still accomplish during the academic year.
8. **Time spent** – this indicator informs the student about his activity on the e-studying platform in a specific course. It shows the amount of time a student spends on the platform on the course in all time and also the hours of study in the current week. It also comes with a segmented bar chart in which the student can see what type of studying he spends the most of the time.

## 3.2 Design

Here you can find the visualization of the specific course dashboard complete with all the charts for our chosen indicators.

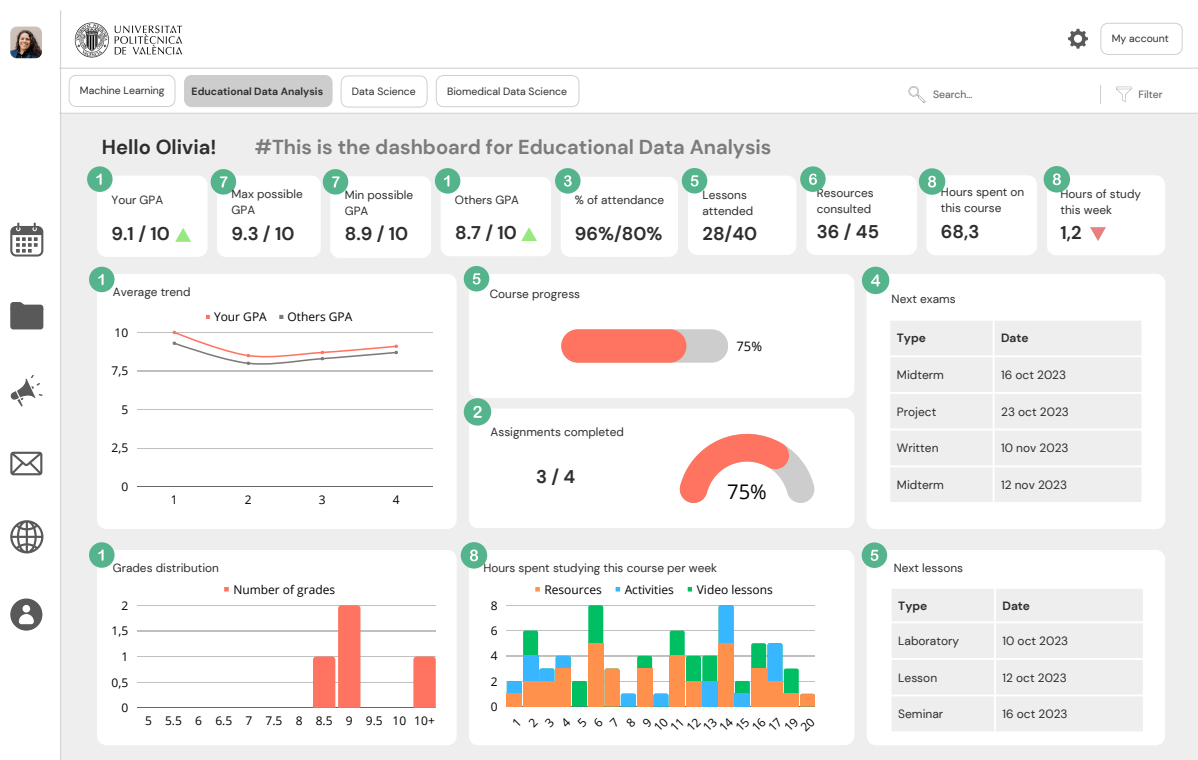


Figure 2: Design of the specific course dashboard