

804252 - ADA - Data Analysis

Coordinating unit: 804 - CITM - Image Processing and Multimedia Technology Centre
 Teaching unit: 804 - CITM - Image Processing and Multimedia Technology Centre
 Academic year: 2019
 Degree: BACHELOR'S DEGREE IN VIDEO GAME DESIGN AND DEVELOPMENT (Syllabus 2014). (Teaching unit Compulsory)
 BACHELOR'S DEGREE IN VIDEO GAME DESIGN AND DEVELOPMENT (Syllabus 2014). (Teaching unit Compulsory)
 ECTS credits: 6 Teaching languages: Catalan, Spanish, English

Teaching staff

Coordinator: Loepfe, Lasse
 Others: Loepfe, Lasse

Degree competences to which the subject contributes

Specific:
 CEVJ 12. (ENG) Analitzar i interpretar les diverses dades que aportin les mètriques i indicadors d'un joc per millorar la seva balanceig quant a disseny i el seu rendiment econòmic.

Teaching methodology

The teaching methodology is divided in four parts:

- Sessions for the content's exposition at classroom
- Practical working sessions at classroom
- Practical development of applications with special reference to the Dashboard project
- Autonomous work to study and carry out exercises and activities

Learning objectives of the subject

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Study load

Total learning time: 150h	Hours large group:	30h	20.00%
	Hours medium group:	18h	12.00%
	Hours small group:	0h	0.00%
	Guided activities:	12h	8.00%
	Self study:	90h	60.00%

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Content

<p>1. Introduction</p>	<p>Learning time: 10h Theory classes: 2h Guided activities: 2h Self study : 6h</p>
<p>Description: 1.1 Planning 1.2 Adquisition & Storage 1.3 Analytics 1.4 Presentation</p>	
<p>2. KPIs</p>	<p>Learning time: 10h Theory classes: 4h Self study : 6h</p>
<p>Description: Overview of the most commonly used indicators in game analytics Number of users: DAU, MAU Retention: DAU/MAU, D1,D3,D7 Monetisation: ARPU, ARPPU Marketing: CPI Community: Virality Performance: FPS, Crashes</p>	
<p>3. Data bases</p>	<p>Learning time: 30h Theory classes: 4h Guided activities: 8h Self study : 18h</p>
<p>Description: 3.1 Events 3.2 Server structure 3.3 SQL 3.3.1 Tables 3.3.2 Queries 3.3.3 Views</p>	

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<p>4. Visualization</p>	<p>Learning time: 20h Theory classes: 2h Guided activities: 6h Self study : 12h</p>
<p>Description: 4.1 General considerations of visualization 4.2 Buisness intelligence software</p>	
<p>5. Case studies</p>	<p>Learning time: 40h Theory classes: 4h Laboratory classes: 12h Self study : 24h</p>
<p>Description: 5.1 Level progression 5.2 Spatial Data 5.3 Level Design 5.4 IAP</p>	
<p>6. Statistics</p>	<p>Learning time: 20h Theory classes: 4h Guided activities: 4h Self study : 12h</p>
<p>Description: 6.1 Sampling 6.2 Regressions 6.3 Classification 6.4 Networks</p>	

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7. Machine Learning and Big Data	Learning time: 20h Theory classes: 4h Laboratory classes: 4h Self study : 12h
Description: 7.1 Uses and abuses of ML 7.2 Supervised vs unsupervised learning 7.3 Cost function and its optimisation 7.4 Regressions 7.5 Descicion trees 7.6 Neural Networks 7.7 Suport Vector Machine 7.8 ML-Agents in Unity	

Planning of activities

Data Analysis	Hours: 18h Self study: 18h
Predictive Models	Hours: 24h Self study: 24h
Dashboard	Hours: 48h Self study: 48h

Qualification system

Practice 1 (Case study 1): 5%
 Practice 2 (Case study 2): 10%
 Practice 3 (Case study 3): 20%
 Mid-term exam: 20%
 Final exam: 35%

In case of suspending the subject through continuous evaluation, you will have the option to perform a recovery exam of the theoretical part, corresponding to 55% of the subject's grade.

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Bibliography

Basic:

Drachen, Anders; Seif El-Nasr, Magy; Canossa, Alessandro, eds. Game analytics: maximizing the value of player data. London: Springer, 2013. ISBN 9781447147688.

Lovell, Nicholas; Fahey, Rob. Design rules for free-to-play games. London: GAMESbrief, 2012.

Luton, Will. Free 2 play: making money from games you give away. Upper Saddle River: Pearson Education, 2013. ISBN 9780321919014.

Others resources:

Hyperlink

Game Analytics 101

<https://www.raywenderlich.com/2972-game-analytics-101>