Detailed Course Description - Course Plan Development and Updating Procedures/ Computer Information Systems Department	QF01/0408-3.0E

Faculty	Faculty Of Science and Information Technology	Department	Computer Information Systems
Course Number	**0113459**	Course Title	**Big Data Management**
Number of Credit Hours	3	Pre-Requisite/Co-Requisite	Information Retrieval

Brief Course Description

This course includes the following topics:
Introduction to Big Data, Data Model for Big Data, Batch Layer, Serving Layer, Realtime Views.

	Course Goals and Learning Outcomes
Goal 1	**To understand the concept of Big Data.**
Learning Outcomes	**1.1** To show a good acquaintance of the basic concepts of Big data.
Goal 2	**To understand the components of the big data model**.
Learning Outcomes	**2.1** To be able to explain the components of the big data model.
Goal 3	**To be acquainted with the big data layers.**
Learning Outcomes	**3.1** To be able to explain the big data layers. **3.2** To acquire the ability to use big data techniques to design and implement a solution to a real life big data problem.
Textbook	**1-** Nathan Marz and James Warren. Big Data: Principles and Best Practices of Scalable Real Time Data Systems. 1st Ed. 2015.
Supplementary References	**1-** Tom White. Hadoop: The Definitive Guide: Storage and Analysis at Internet Scale. 4th Ed. 2015.

Course Timeline				
Week	**Number of Hours**	**Course Topics**	**Pages (Textbook)**	**Notes**
01	**1 1 1**	Introduction to Big Data, Scaling in Traditional Databases, NoSQL, Desired properties of Big Data System	**1-9**	
02	**1 1 1**	The problem with fully incremental architecture, Lambda architecture, Recent Trends in Technology	**9-29**	
03	**1 1 1**	Properties of data, Fact-Based model, Example,	**29-54**	
04	**1 1 1**	Data Storage on the batch layer	**54-65**	
05	**1 1 1**	Data Storage on the batch layer, illustration	**65-83**	
06	**1 1 1**	**First Exam 20%**		
07	**1 1 1**	Computing on Batch Layer, Scalability	**139-156**	
08	**1 1 1**	MapReduce: A paradigm for Big Data Computing, Example Batch Layer	**156-179**	
09	**1 1 1**	Serving Layer	**179-196**	
10	**1 1 1**	Serving Layer Examples	**196-205**	
11	**1 1 1**	**Second Exam 20%**		
12	**1 1 1**	Realtime views: Computing, Storing, Challanges of incremental computation.	**207-220**	
13	**1 1 1**	Realtime view Examples	**220-225**	

14	**1 1 1**	Queueing and Stream Processing, advanced topics in big data.	**225-242**	
15	**1 1 1**	**Project Presentations**		
16	**1 1 1**	**Final Exam 50%**		

Theoretical Course Evaluation Methods and Weight	Participation = 10% First Exam 20% Second Exam 20% Final Exam 50%	**Practical (Clinical) Course Evaluation Methods**	Semester Students' Work = 50% (Reports, Research, Quizzes, Etc.) Final Exam = 50%

Approved by Head of Department		**Date of Approval**	

Extra information (to be updated every semester by corresponding faculty member)

Name of Teacher		Office Number	
Phone Number (Extension)		Email	_____@zuj.edujo
Office Hours			