

Korea University International Summer Campus (KU ISC) 2023

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June 27, 2023 ~ August 3, 2023

ISC356B – Big Data Analytics

I.Instructor

Professor	:	Q B. Chung, Ph.D.
E-mail		q.chung@villanova.edu
Home Institution	:	Villanova University
Class Time	:	Period 3 (13:10 ~ 14:50 KST)
Office	•••	ТВА
Office Hours	:	By appointment

II. Textbook

Required Textbook	:	Minelli, M., Chambers, M. & Dhiraj, A. (2013). Big Data Big Analytics . Wiley CIO Series. Hoboken, NJ: John Wiley & Sons, Inc. (ISBN: 978-1-118-14760-3)	
Recommended			
Additional	:	Additional reading materials will be available on Blackboard.	
Readings			

III. Course Description and Objectives

Typically characterized by volume, velocity, and variety – dubbed the three V's of big data – the big data phenomenon is undeniably real and has been growing in enthusiasm, broad attention, corporate spending, and even new educational program launches. No matter how unscientific 'big data' may sound, the term has now gained sufficient respect from both academics and practitioners, granting legitimacy to a rapidly increasing number of big data initiatives. For big data, just like any other enabling technologies, the volatile process of setting standards in hardware, software, and service provision will see many giants rise and fall, and once the stability of a steady state is obtained – however brief it may be – all technologies surrounding big data are bound to return to their 'true' calling of analytics. This course will examine big data from both theoretical and practical perspectives by blending lecture, quick-and-dirty research, group discussion and presentation, and hands-on exercises.

By completing this course, students will be able to:

- Define and characterize the big data phenomenon;
- Describe the three V's of big data;
- Recognize the role of data played in decision making;
- Present key basic concepts of data management;
- Discuss big data practices and trends in various industries;
- Identify and describe the technology and techniques behind the big data movement;

- Identify and describe Apache Hadoop and the related software platforms;
- Discuss managerial issues of big data deployment; and
- Make presentations using bootstrap research on technical topics.

IV. Grading

Participation	:	10%
Assignment #1	:	10%
Assignment #2	:	10%
Group Presentation #1	:	10%
Group Presentation #2	:	10%
Midterm Exam	:	20%
Final Exam	:	30%

V. Class Outline

Date	Торіс	Chapter	Remarks
June 27 (Tue)	Orientation Day		
June 28 (Wed)	Introduction, Group formation, Course overview		
June 29 (Thu)	What is Big Data?	Ch.1	
June 30 (Fri)	Data and Decisions	Ch.1	
July 3 (Mon)	Basic Concepts of Big and Traditional Data	Handout	
July 4 (Tue)	Assignment #1 Group Session		
July 5 (Wed)	Group Presentations on Basic Concepts		
July 6 (Thu)	Big Data Industry Snapshot (I)	Ch.2	
July 10 (Mon)	Big Data Industry Snapshot (II)	Handout	
July 11 (Tue)	Big Data Analytics Technologies and Techniques (I)	Ch.3	
July 12 (Wed)	Big Data Analytics Technologies and Techniques (II)	Ch.5	
July 13 (Thu)	Midterm Exam		
July 17 (Mon)	Apache Hadoop and the Evolving Hadoop Ecosystem (I)	Ch.4	
July 18 (Tue)	Apache Hadoop and the Evolving Hadoop Ecosystem (II)	Handout	
July 19 (Wed)	Big Data Analytics in Action (I)	Handout	
July 20 (Thu)	Big Data Analytics in Action (II)	Handout	
July 24 (Mon)	Moving Forward with Big Data	Ch.6	
July 25 (Tue)	Moving Forward with Big Data	Handout	
July 26 (Wed)	Big Data & Data Ethics	Ch.7	
July 27 (Thu)	Assignment #2 Group Session		
July 31 (Mon)	Group Presentations on Big Data Use Cases		
Aug 1 (Tue)	Final Exam		
Aug 2 (Wed)	Course Review & Advising Session		
Aug 3 (Thu)	Graduation Day		
	(Available both Online/Offline)		

VI. Additional Reading as Handout (Available in PDF on Blackboard)

- Understanding Big Data | Ch.1: What is big data? Hint: You're a part of it every day
- Are you ready for the era of 'big data'? [McKinsey]

- You May Not Need Big Data After All [HBR]
- Magic Quadrant BI and Analytics Platforms [Gartner]
- Analytics: The real-world use of big data [IBM]
- Big data. Harnessing a game-changing asset [Economist]
- Big Data Artificial Intelligence [European Commission]
- The big data opportunity for HR and Finance [HBR]
- Hype Cycle for Big Data [Gartner]
- Data Visualization: Making Big Data Approachable and Valuable [SAS]
- Dashboards as easy to use as Google [Qlik]
- Understanding Big Data | Ch.4: All About Hadoop: The Big Data Lingo Chapter
- Hadoop Buyer's Guide [ubuntu]
- A Non-Geek's Big Data Playbook [SAS]
- Big Data Hadoop Solutions [Forrester]
- Amazon Web Services: An Overview [Global K]
- The CIO's Chance of a Lifetime: Using Big Data and Analytics as the Ticket to Strategic Relevance [IDC/SAS]
- The big-data revolution in US health care: Accelerating value and innovation [McKinsey]