Course Name	BIG DATA ANALYTICS	Course Code	ITEC-416		
Credit Hours	3	Contact Hours	Lec	Lab	Total
			2	2	4
Offered as	☐ University Requirement ☐ College Requirement ☒ Program Requirement ☐ Core ☒ Elective ☒ ITEC ☐ COMP ☐ CNET				
Level	8	Prerequisite	ITEC313		

Course Description:

Big Data is the term for a collection of datasets so large and complex that they become difficult to process using on-hand database management tools or traditional data processing applications. The challenges include capture, storage, search, sharing, transfer, analysis, and visualization. This Big Data Analytics course will first introduce the overview applications, market trend, and the things to learn. Then, it will introduce the fundamental platforms, such as Hadoop, Spark, and other tools, such as IBM System G for Linked Big Data. Afterwards, the course will introduce several data storage methods and how to upload, distribute, and process them. This will include HDFS, HBase, KV stores, document database, and graph database. The course will go on to introduce different ways of handling analytics algorithms on different platforms. Then, it will introduce visualization issues and mobile issues on Big Data Analytics. Students will then have fundamental knowledge on big data analytics core concepts, technologies and techniques so they can gain the necessary skills needed to design highly scalable data analytics systems and to handle various real-world challenges.

Course Objectives: By the end of the course the student will be able to:

- Describe developed knowledge, skills and understanding around a range of capabilities and benefits of big data.
- Handle analytics algorithms on different platforms to big data.
- Learn techniques about uploading, distributing, storing and processing large amount of big data (structured and unstructured data)
- Understand big data management and their technologies to design and build big data applications through highly scalable systems including visualization issues and mobile issues.
- Apply concepts and principles to handle, analyze and interpret various real-world challenges on Big Data Analytics using analytics and computer-based techniques.
- Demonstrate how to effectively interpret and communicate their ideas through reports/presentations to exhibit the ability to function in a group as a team member.

Assessment Methods						
	☒ **Mid Exam**	**15%**	☒ **Mini Project**	**15%**	☒ **Assignment**	**10%**
	☒ **Lab Exam**	**20%**	☒ **Final Exam**	**40%**		

Text Book:

- Th. Erl, W. Khattak and P. Buhler," Big Data Fundamentals: Concepts, Drivers & Techniques", Pearson Publisher, ISBN: 9780134291079, 2016.
- Big Data Analytics: A Hands-On Approach 2019 by Arshdeep Bahga & Vijay Madisetti, Published by Arshdeep Bahga & Vijay Madisetti,ISBN: 978-1-949978-00-1

References:

- Ivanka Menken, "Big Data Complete Certification Kit", Core Series for IT, 2013.
- In addition, material from "Data Science and Big Data Analytics Student Guide" distributed by EMC Education Services will be provided to the students.