

**Faculty of Computers and Information Technology**

**Selected Topics in Information Systems-2**

**Information :**

**Course Code :** IS468

**Level :** Undergraduate

**Course Hours :** 3.00- Hours

**Department :** Department of Information Systems

**Area Of Study :**

Use basic mathematics and science in computing and information.  
Use effectively communication skills.  
Use and adopt the appropriate knowledge and skills necessary for a contemporary business context and demonstrate the new trends data science.  
Define the analytical aspects and issues in data science currently relevant to Big Data environment.  
Identify the management and ethical issues relating to data science.  
Provide the community with professional expertise in data science

**Description :**

Topics which are not included in the curriculum and seems to be needed should be suggested as an elective course by IS department

**Course outcomes :**

**a.Knowledge and Understanding: :**

1 -	Illustrate modeling building for discovering knowledge from Big data
2 -	Describe data science lifecycle.
3 -	Identify new trends and innovation in IS
4 -	Explain information communication and visualization techniques
5 -	. Identify the principles of business value beyond applying data science

**b.Intellectual Skills: :**

1 -	Demonstrate the role of data science in the society
2 -	Compare and differentiate between different models and techniques used for problems solutions
3 -	Select the good model for decision analytic thinking.
4 -	Evaluate and integrate data and information for predictive analytics
5 -	Evaluate and verify different data science tasks and techniques

**c.Professional and Practical Skills: :**

1 -	Manipulate big data and draw conclusions
2 -	Adapt different data science skills for knowledge discovery
3 -	Execute different data science tasks and techniques
4 -	Execute existing analytical and visualization models

**d.General and Transferable Skills: :**

1 -	Work in a team to develop the requirement documentation
2 -	Apply communication skills in presentations and report writing using various methods and tools
3 -	Appreciate continuous professional development and lifelong learning

**Course Topic And Contents :**

Topic	No. of hours	Lecture	Tutorial / Practical
Introduction	4	2	2
Differences from Relational Databases	4	2	2
NoSQL Database Theory	4	2	2
Key-Value Databases	4	2	2
Document Stores	4	2	2
Column Family Stores	4	2	2
Graph Databases	4	2	2
The Database Landscape	4	2	2
Mid-Term Exam	2		
Choosing a NoSQL Database	4	2	2
Distributed and Cloud Databases	4	2	2
Big data and NoSQL Applications	4	2	2
Project presentation	4	2	2
Final Exam	2		

**Teaching And Learning Methodologies :**

Interactive Lectures including discussion
Practical Lab Sessions
Self-Study (Project / Reading Materials / Online Material / Presentations)
Brain Storming and Problem Solving

**Course Assessment :**

Methods of assessment	Relative weight %	Week No	Assess What
Final Exam	40.00	14	
Midterm Exam (s)	20.00	9	
Quizzes	10.00	5	
Research and Presentations	10.00	10	
Team Work Projects	20.00	11	

**Course Notes :**

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Course Notes are available with all the slides used in lectures in electronic form on Learning Management System (Moodle)

**Recommended books :**

Jake VanderPlas, Python Data Science Handbook: Essential Tools for Working with Data. O'Reilly. 2016. ISBN: 978-1491912058

**Web Sites :**

- [www.ekb.eg](http://www.ekb.eg)
- <https://academic.oup.com/database>