Class	Content	Home work
1 -Data and Analytics Basics	• Introduction • Basics of Data • Basics of Analytics	Reading assignments

2 - Structured and unstructured data	• Unstructured Data
	   o What is it?
	   o How is it stored?
	   o How is it read
	   o Introduction to RDBMS
	• Basics of structured data
	   o What is unstructured data?
	   o Types of unstructured data!
	   o Example of unstructured data!
	   o Why is unstructured data important?
	   o BIG DATA!!!!
	   o How is unstructured data stored?
	   o How is unstructured data analyzed?
		Reading assignments

3 - Data Ingestion and Storage	• Data Pipelines
	• Sources
	   o Types
	• Acquire
	   o Steps
	   o Tools
	• Process
	   o Steps
	   o Tools
	• Organize
	   o Storage types
	   o Tools
	• ETL vs ELT
	• Data warehouse vs Data Lakes
		Reading assignments

4 – Data and Analytics	• Types of Analytics
	   o Descriptive
	   o Diagnostic
	   o Predictive
	   o Prescriptive
		Reading assignments

5 - Data Visualization	• Importance of visual story telling • Types of Graphs and Charts	Reading assignments
6 - Machine learning and Artificial Intelligence	• History of Machine learning/AI • Difference between ML and AI • ML Types and applications • AI Types and applications	Reading assignments

<u>Capstone Project</u>

1. Why has the data and Analytics field taken off recently and what is in the future for it?
2. 3 previously unsolvable problems being solved using Data and Analytics now.
3. Description of the types of analytics and example
4. Why choosing the right tool set is important for analytics of a company?
5. Why is Hadoop dead? Is Big Data dead?
6. Most important data for a company is the data it produces itself.
7. Why Cloud is the best destination for analytics?
8. 3 ways of building chatbots.
9. Open source (Free) solutions for data analysis
10. Optional deep dives
    a. Hadoop and Map-reduce
    b. Elastic Search, Logstash and Kibana
    c. Relational databases – MySQL, SQL Server, Oracle etc.
    d. No SQL databases – Mongo, Elastic, S3
    e. ETL tools – Abinitio, Datastage, Talend
    f. Visualization tools – Tableau, QLIK, Power BI

Rubric

➢ 200 words minimum – 500 words maximum
➢ Should be written in an easy to understand manner
➢ Should show that research has been done in coming up with the paper

Papers will be published on second innings' websites and social media sites.