



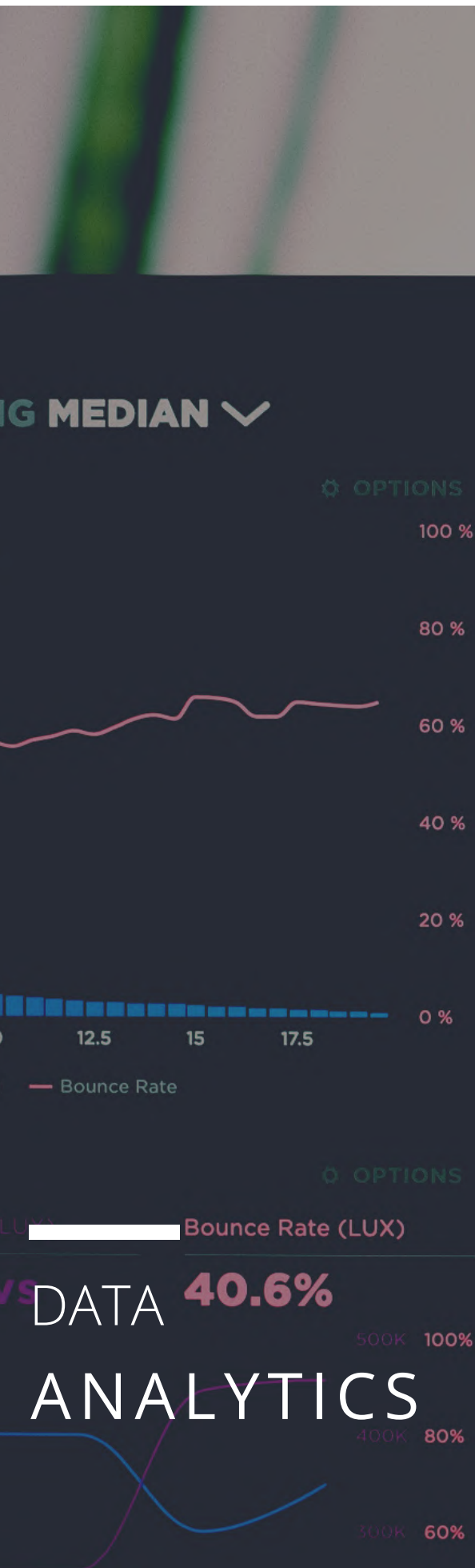
GPTS SUMMER SCHOOL

# DATA ANALYTICS

## COURSE INFORMATION

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BY VIJAYBHOO MI UNIVERSITY



## “DATA IS THE NEW OIL.” — CLIVE HUMBY

### ABOUT THE COURSE

Data Analytics (extended to Data Science) is the most sought after specialisation given that almost 1.5 lakh jobs were created in India in the year 2020 as per Business World. However, it requires a strong foundation in Statistics and Business Analytics which this course intends to provide high school aspirants looking to explore whether they enjoy the subject to be able to explore a career in Data Science. Based on the orientation, students could look at a Bachelors in Data Science or even a specialised Engineering Degree in Artificial Intelligence and Data Science.

### COURSE OBJECTIVES

1. Review basic descriptive statistics taught in Foundation; Review of Normal distribution and its applications
2. Learn different types of sampling and their applications; methods of sampling; creating random samples in Excel
3. Understand the concept of Confidence Interval and hypothesis testing and decision making through different types of non-parametric tests and their applications
4. Learn simple modelling and predictive analytics in Excel using simple linear regression.

### COURSE FORMAT

Most videos will be lectures with the instructor talking using slides and solving problems for setting a common understanding of commands in excel and interpretation of results. Given the introductory nature of this course and emphasis on concepts and understanding of statistics. Demo using other tools like R and Python is not part of this course. Students should take notes and content will not be shared though the recommended text will be provided. There will be a final graded exam and minimum passing marks will be necessary to get a pass certification.



### ESSENTIAL FOR THE COURSE

- Course requirements: No pre-requisites. Anyone who is interested in exploring Data Analytics can enrol. Certification will be only for students who pass with a minimum marks in the final exams (60 / 100)
- System requirements: PC / laptop (loaded with Excel or open source equivalent) and broadband connectivity
- Being punctual and on time for the lecture. Concepts mentioned earlier will not be repeated and this can cause a loss of continuity or understanding for the student who does not log in on time.

### COURSE TUTOR



### PROF. SOUMYA CHOUDHURY

Associate Professor (Adjunct)  
IFIM Business School

## TEACHING AND LEARNING PLAN

Session	Topic	Details	Duration
1	Introduction to Data Analytics	Introduction to Data, Information and Knowledge Business Analytics – Types, Components and applications Framework of data-driven Decision Making Concept of MIS, DSS, ERP	1 hour
2	Terminology, Descriptive	Definitions Descriptive Statistics	1 hour
3	Sampling Techniques	Sampling <ul style="list-style-type: none"> <li>- Random</li> <li>- Stratified</li> <li>- Cluster</li> <li>- Bagging</li> <li>- Non-probability Sampling</li> <li>- Convenience</li> <li>- Voluntary</li> </ul>	1 hour
4	Distribution and CLT	Distributions Central Limit Theorem	1 hour
5	Exercises	Solved Examples for concepts above on Excel	1 hour
6 & 7	Confidence Intervals	Level of Confidence CI for Normal Distribution Significance Solved Examples	2 hours
8 & 9	Hypothesis Testing	Null and Alternate Hypothesis Steps to follow for HT Test Statistic P-Value	2 hours
10 & 11	Linear Regression	Linear Regression Adjusted R square T-test F-Test Solved Example	2 hours
12	Written Test	Entire Portion Need your computer loaded with Excel	1 hour