DATA ANALYTICS WITH PYTHON

PROF. A RAMESH
Department of Management Studies
IIT Roorkee

TYPE OF COURSE : New | Elective | UG/PG
COURSE DURATION : 12 weeks (27 Jan’ 20 - 17 Apr’ 20)
EXAM DATE : 25 Apr 2020

PRE-REQUISITES : Nil

INTENDED AUDIENCE : Management, Industrial Engineering and Computer Science Engineering Students

INDUSTRIES APPLICABLE TO : Any analytics company

COURSE OUTLINE :
This course includes examples of analytics in a wide variety of industries, and we hope that students will learn how one can use analytics in their career and life. One of the most important aspects of this course is that hands-on experience creating analytics models will be shared.

ABOUT INSTRUCTOR :
Prof. Ramesh Anbanandam graduated in Production Engineering from Madras University, Chennai. He did his post-graduation from National Institute of Technology, Trichy. He later earned his Ph.D. in Supply Chain Management from Indian Institute of Technology Delhi. His professional interest includes Humanitarian Supply Chain Management, Operations Management, Operations Research, Healthcare Waste Management, Sustainable Multi-model and Freight Transportation, Transportation Asset Management and Advanced Data Analytics using Python and R-programming. He has published various research articles in reputed journals. He was also awarded Emerald Literati Award for Excellence under “Highly Commended Research Paper in the Year 2011 and 2016” in the field of Supply Chain Management.

COURSE PLAN :
Week 1: Introduction to data analytics and Python fundamentals
Week 2: Introduction to probability
Week 3: Sampling and sampling distributions
Week 4: Hypothesis testing
Week 5: Two sample testing and introduction to ANOVA
Week 6: Two way ANOVA and linear regression
Week 7: Linear regression and multiple regression
Week 8: Concepts of MLE and Logistic regression
Week 9: ROC and Regression Analysis Model Building
Week 10: x 2 Test and introduction to cluster analysis
Week 11: Clustering analysis
Week 12: Classification and Regression Trees (CART)