



YASHASWI EDUCATION SOCIETY'S  
INTERNATIONAL INSTITUTE OF MANAGEMENT SCIENCES (IIMS),  
CHINCHWAD, PUNE

# FINANCIAL ANALYTICS

YEAR : 2021-22

Course Coordinator

**PROF. MAHESH MAHANKAL**

Trainer

**MR SUDHIR BHAGAT**

FINANCIAL ANALYST TRAINER

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<b>Course Code</b>	<b>FA-1</b>
<b>Course Title-</b>	<b>Financial Analytics</b>
<b>Course Delivery</b>	<b>(40 Teaching Hours)</b>
<b>COURSE SCHEDULE-</b>	<i>The Classes will be held on Every Tuesday from 03.00 to 06.00PM, Wednesday 03.00 to 06.00 PM and Saturday from 02.00 to 05.00PM. (including 20 mins break)</i>
<b>Course Commencement</b>	<b>2nd July 2022</b>
<b>ASSESSMENT CRITERIA</b>	Periodic evaluations have been built in throughout the duration of the course in the form of quizzes, assignments, projects, case studies and other objective/subjective assessments. The evaluations are designed to ensure continuous student engagement and to encourage learning. Students who successfully clear the same along with the requisite attendance criteria will be awarded a Certificate from IIMS Chinchwad.
<b>ELIGIBILITY</b>	<ul style="list-style-type: none"> <li>• Graduation or equivalent degree from any recognized University or Institution.</li> <li>• Working professionals</li> <li>• Corporate Nominated (Graduation criteria may be considered for exemption in cases where participants have some prior experience in Finance domain).</li> </ul>

**Course Learning Outcomes (CLO):**

**At the end of the course, students will be able to:**

- Have a working knowledge of the issues of data quality, data storage, data scrubbing, data flows, and data encryption and their potential solutions.
- Understand and design various schemas needed for the representation of financial data.
- Tackle problems dealing with data management issues such as collection, warehousing, preprocessing and querying.
- Apply the newly acquired data management and database skills to financial data from the capital markets, social media, and the financial services sector.

**40 Teaching Hours**



# Syllabus

Week-1	Introduction to Financial Data Science. The Major Building Blocks. Introduction to R. Case Study: Exploratory Data Analysis Financial Data Quality Issues and Data Scrubbing. Feature Extraction and Portability. Data Reduction and Transformation.
Week 2	Web Page Retrieval, Scrapping, Regular Expression Extraction. Case Study: Data and Web Technologies.
Week 3	Similarity and Distances. Impact of High Dimensionality. Impact of Data Distribution. Impact of Local Data Distribution.
Week 4	Classification Methods.
Week 5	Tree-Based Methods.
Week 6	Clustering Methods.
Week 7	Time Series Data. Using Decision Tree to Trade Stock. Building a Trading Strategy. Handling Time-Dependent Data in R.
Week 8	Mining Text Data. Document Preparation and Similarity Computation. Topic Modeling.
Week 9	Case Study: Using Statistics to Identify Spam.
Week 10	Blockchain. Cryptocurrencies.
Week 11	Outlier Analysis.
Week 12	Hadoop. HDFS. MapReduce. Hive. Pig.
Week 13	Review and Catching up.

## Suggested Readings:

1. Charu C. Aggarwal, **Data Classification: Algorithms and Applications**. CRC Press, 2015. (ISBN: 978-1-4665-8674-1)
2. Charu C. Aggarwal, **Data Mining**. Springer, 2015. (ISBN: 978-3-319-14141-8)
3. Deborah Nolan and Duncan T. Lang, **Data Science in R: A Case Studies Approach to Computational Reasoning and Problem Solving**, CRC Press, 2015. (ISBN: 978-1-4822-3481-7)
4. Norman Matloff, **The Art of R Programming**, No Starch Press, 2011. (ISBN: 978-1-59327-384-2)
5. Cathy O'Neil and Rachel Schutt, **Data Science**, O'Reilly, 2014. (ISBN: 978-1-449-35865-5)

