

College of Engineering Pune
(An Autonomous Institute of Government of Maharashtra)
Department of Mathematics

(MA (MI)-) Design of Financial Markets Systems

Minor Certification in Mathematics with specialization in 'Quantitative Finance' (Semester VIII)

Teaching Scheme
Lectures: 3 hrs / week

Examination Scheme
Internal Test 1: 20 marks
Internal Test 2: 20 marks
End Sem. Exam: 60 marks

Course Description: Technology tools and applications are used across the financial industry, by various participants, ranging from retail clients all the way to the traders. Each system has to be designed considering its end user, use case and frequency of use, which makes the user experience and performance objectives differ from case to case.

UNIT I : Trader v/s Banker v/s Investor Perspective, Mechanics of Fixed Income and Forex trading, Types of Traders - Hedgers, Speculators, Arbitraders, Dealers, RMs, Wealth Managers, Real-time Trading v/s Long-term Investment Perspective, High Frequency Trading, Types of Orders, Discretionary v/s Advisory v/s Execution Platform. **[10 Hrs]**

UNIT II : Market Data, Reference data, Client Data, Candle stick, Market CHarts and types, Indicators-Lagging and leading, Performance during Pricing and Trade Execution, Performance metrics across different asset classes. **[10 Hrs]**

UNIT III : Subscription, IPO, Steps of IPO, IPO Alternatives-Direct listing, Dutch Auction, Performance of IPO, Lock-up, Order Aggregation Workflow. **[10 Hrs]**

UNIT IV : Straight-Through-Processing and Interfaces, Fintech APIs, Notifications, Emails, Alerts, Reports, Statements, Batch Jobs, RFQs, Alert events, Portfolio Reports, Portfolio statements, PnL statements, Account holding statements, Transaction statements, Mobile apps and Web apps, FinIQ's proprietary systems, Indian and International Financial Regulations. **[10 Hrs]**

Text Book :

Proprietary FinIQ Documents & Manuals.

Course Outcomes :

1. outline the future of Financial Markets systems by way of FinIQ Mobile and Web Apps.
2. contrast Financial Markets systems from the perspectives of different market participants.
3. examine the different functionalities of Financial Markets systems.
4. evaluate the performance parameters during Pricing and Trade Execution.
3. experience the manner in which a banker uses the platform and modeling of different alerts.