## B.Tech. CSFT

## COURSE PLAN: THEORY COURSE

| | | | | |
|---|---|---|---|---|
| **Department :** | **Humanities and Management** | | | |
| **Course Name & code :** | **Statistics for Finance** | | **CSF3124** | |
| **Semester & branch :** | **V** | **CSFT** | | |
| **Name of the faculty :** | **Dr. Shilpa Shetty H** | | | |
| **No of contact hours/week:** | **L** | **T** | **P** | **C** |
| | **3** | **0** | **0** | **3** |

### Course Outcomes (COs) to PO, PSO, BL Mapping

| | At the end of this course, the student should be able to: | No. of Contact Hours | Marks | Program Outcomes (POs) | PSOs | BL |
|---|---|---|---|---|---|---|
| **CO1** | Understand fundamental statistical concepts and their relevance in finance. | 10 | 20 | PO2, PO11 | PSO2, PSO3 | L2 |
| **CO2** | Apply and interpret simple and multiple linear regression models for cross-sectional financial data. | 6 | 20 | PO2, PO11 | PSO2, PSO3 | L3 |
| **CO3** | Estimate and forecast using ARIMA and GARCH models for time series data. | 6 | 20 | PO2, PO11 | PSO2, PSO3 | L4 |
| **CO4** | Apply and interpret fixed effects and random effects models for panel data. | 6 | 20 | PO2, PO11 | PSO2, PSO3 | L3 |
| **CO5** | Critically evaluate statistical results and draw meaningful conclusions from financial data analysis. | 8 | 20 | PO2, PO11 | PSO2, PSO3 | L5 |
| | **Total** | **48** | **100** | | | |

## Course Articulation Matrix

| CO | Engineering knowledge | Problem analysis | Design/development of solutions | Investigations of complex problems | Modern tool usage | Engineer and society | Environment and sustainability | Ethics | Individual and team work | Communication | Project management and finance | Life-long learning | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 | PSO4 |
| CO1 | | 2 | | | | | | | | | 2 | | | 2 | 2 | |
| CO2 | | 2 | | | | | | | | | 2 | | | 2 | 2 | |
| CO3 | | 2 | | | | | | | | | 2 | | | 2 | 2 | |
| CO4 | | 2 | | | | | | | | | 2 | | | 2 | 2 | |
| CO5 | | 2 | | | | | | | | | 2 | | | 2 | 2 | |
| Average Articulation Level | | 2 | | | | | | | | | 2 | | | 2 | 2 | |

## ICT Tools used in delivery and assessment

| Sl. No | Name of the ICT tool used | Details of how it is used |
|---|---|---|
| 1. | Computer-Internet | Content creation and presentation |
| 2. | Projector | Classroom Presentation |
| 3. | Microsoft Office Power Point | Classroom Presentation and discussion |
| 4. | Microsoft Office Excel | Analyse financial data |
| 5. | Collaborative Tools | Group Assignments |
| 6. | LMS | MCQ, Attendance |

***Typical tools including LMS, Smart Boards, MS Teams, etc***

## Mapping of Course Outcomes (COs)/Course Learning Outcomes (CLOs) #

| At the end of this course, the student should be able to: | | No. of Contact Hours | Marks | Program Outcomes (POs) | Learning Outcomes (LOs) | BL |
|---|---|---|---|---|---|---|
| **CLO1** | Understand fundamental statistical concepts and their relevance in finance. | 16 | 10 | PO2, PO11 | C15 | L2 |
| **CLO2** | Apply and interpret simple and multiple linear regression models for cross-sectional financial data. | 8 | 6 | PO2, PO11 | C15 | L3 |
| **CLO3** | Estimate and forecast using ARIMA and GARCH models for time series data. | 8 | 6 | PO2, PO11 | C15 | L4 |
| **CLO4** | Apply and interpret fixed effects and random effects models for panel data. | 8 | 6 | PO2, PO11 | C9, C15 | L3 |
| **CLO5** | Critically evaluate statistical results and draw meaningful conclusions from financial data analysis. | 8 | 8 | PO2, PO11 | C9, C15 | L5 |
| | **Total** | **48** | **100** | | | |

*# Applicable to IET Accredited Courses (modules) Only*

## Delivery and Assessment Plan of LOs #

| Learning Outcome (LO) mapped to the course | | Delivery and assessment Plan |
|---|---|---|
| **LO** | **LO statement** | |
| **CLO1** | Understand fundamental statistical concepts and their relevance in finance. | Lecture-hands on training, Quiz- Mid-term & End term |
| **CLO2** | Apply and interpret simple and multiple linear regression models for cross-sectional financial data. | Lecture-hands on training, Quiz, Mid-term & End term |
| **CLO3** | Estimate and forecast using ARIMA and GARCH models for time series data. | Lecture-hands on training, Quiz, Mid-term & End term |
| **CLO4** | Apply and interpret fixed effects and random effects models for panel data. | Lecture-hands on training, Quiz, Mid-term & End term |

| | | |
|---|---|---|
| **CLO5** | Critically evaluate statistical results and draw meaningful conclusions from financial data analysis. | Group assignment |

*# Applicable to IET Accredited Programs Only*

## Assessment Plan (As communicated from o/o AD-A, in every odd semester)

*IN – SEMESTER ASSESSMENTS*

| Sl. No. | Assessment Mode | | Assessment Method | **Time Duration | **Marks | ** Weightage | Typology of Questions | **Schedule | **Topics Covered |
|---|---|---|---|---|---|---|---|---|---|
| 1 | MISAC | 1 | Quiz | 10 Mins | 5 | 10 MCQs × ½ = 5 | Bloom's taxonomy (B) level of the question should be L3 and above. | **** | **** |
| | | 2 | Mid-Term Test | 120 Mins | 30 | **** | Bloom's taxonomy (BT) level of the question should be L3 and above. | **** | **** |
| | | 3 | Quiz | 10 Mins | 5 | 10 MCQs × ½ = 5 | Bloom's taxonomy (BT) level of the question should be L3 and above. | **** | **** |
| 2 | FISAC | 1 | Group Assignment | **** | 10 | **** | Bloom's taxonomy (BT) level of the question should be L3 and above. | **** | **** |

| *END – SEMESTER ASSESSMENT* | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | **Regular/Make–Up Exam** | 180 Mins | 50 | Answer all 5 full questions of 10 marks each. Each question can have 3 parts of 2/3/4/5/6 marks. | Bloom's taxonomy (BT) level of the question should be L3 and above. | **** | Comprehensive examination covering full syllabus. |

** *Individual faculty will be entering the details*

*** *Individual faculty shall identify the assessment method from FISAC Assessment method (Table 1 below) and fill in the details.*

*NOTE: Information provided in the Table 1 is as per the In-semester assessment plan notified by Associate Director (Academics).*

## Lesson Plan

| L No | Topics | CO Addressed |
|---|---|---|
| 0 | Overview of the course | |
| 1 | Foundation of Statistics | CO1 |
| 2 | Foundation of Statistics | CO1 |
| 3 | Foundation of Statistics | CO1 |
| 4 | Foundation of Statistics | CO1 |
| 5 | Foundation of Statistics | CO1 |
| 6 | Foundation of Statistics | CO1 |
| 7 | Foundation of Statistics | CO1 |
| 8 | Capitaline database training | CO1 |
| 9 | Lab | CO1 |
| 10 | Lab | CO1 |
| 11 | Cross-Sectional data analysis | CO2 |
| 12 | Cross-Sectional data analysis | CO2 |
| 13 | Cross-Sectional data analysis | CO2 |
| 14 | Cross-Sectional data analysis | CO2 |
| 15 | Lab | CO2 |
| 16 | Lab | CO2 |
| 17 | Time series data analysis | CO3 |
| 18 | Time series data analysis | CO3 |
| 19 | Time series data analysis | CO3 |
| 20 | Time series data analysis | CO3 |
| 21 | Lab | CO3 |
| 22 | Lab | CO3 |
| 23 | Panel data analysis | CO4 |
| 24 | Panel data analysis | CO4 |
| 25 | Panel data analysis | CO4 |
| 26 | Panel data analysis | CO4 |
| 27 | Lab | CO4 |
| 28 | Lab | CO4 |
| 29 | Lab | CO4 |
| 30 | Group assignment | CO5 |
| 31 | Group assignment | CO5 |
| 32 | Presentation | CO5 |
| 33 | Presentation | CO5 |
| 34 | Presentation | CO5 |
| 35 | Presentation | CO5 |
| 36 | Revision | CO1, CO2,CO3,CO4 |

**Faculty members teaching the course (if multiple sections exist):**

| Faculty | Section |
|---|---|
| Dr. Shilpa Shetty | NA |

**References:**

| | |
|---|---|
| **Textbooks** | • Panchanan Das, Econometrics in Theory and Practice, Springer, 2019<br>• Damodar N. Gujarati, Dawn C. Porter, & Sangeetha Gunasekar. Basic of Econometrics, 5e. McGraw Hill Education Pvt. Ltd., New Delhi, India, 2012.<br>• Lisa Daniels Nicholas Minot, An introduction to Statistics and Data Analysis using Stata, Sage Publications, 2019 |
| **Self-Directed Learning** | |
| **Research Literature/ Case Studies** | |
| **NPTEL/Coursera/any MOOC-based material** | • **** |

**Submitted by: Dr. Shilpa Shetty**

*(Signature of the faculty)*

**Date: 18.07.2025**

**Approved by:**

21/8/2025

*(Signature of HoD)*

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