MSc Econometrics and Financial technology

Objectives and Outcome:

Master of Econometrics and Financial Technology (MSc) is a four-semester programme aiming at providing rigorous training in economics, quantitate techniques and analytical methods for an in-depth understanding of economics and finance. Econometrics and Financial Technology are inseparable parts of financial analysis in the contemporary world. The course is so designed as to enable students to experience a unique blend of economics, finance and econometric tools that will give them state of the art knowledge in the subject and inculcate in them problem solving skills that are most required in the job market. Students will be given meticulous training in problem solving capability, using real world examples with the help of econometric packages. There are 3 Practical lab training courses spread over the 2nd to 4th semesters with a view to skill up students in data processing, estimation, and analysis. In addition, students will have to take an internship with an industry, financial institution, or a research organization to gain hands on experience in their area of specialization. What distinguishes this course of study from the run of the mill programme is its emphasis not only on theory but also on application. Pursuance of this course will have imparted students a thorough knowledge of economic theory, finance and econometric tools with practical experience eminently required for university/ college teaching, working in rating agencies, financial institutions, corporate enterprises, and research organizations.

Regulations for the Master's Programme in Econometrics and Financial Technology

1. ELIGIBILITY FOR ADMISSION

1.1. Eligibility for admission to M.Sc. Econometrics and Financial Technology shall be a Bachelor's Degree in Economics/Econometrics/Finance/Data Science/Commerce or BSc. Mathematics /Statistics or B.Tech. with 55% marks.

1.2 Candidates who have appeared in the Final Year Degree Examination but awaiting results are permitted to seek provisional admission to the course. Such candidates required to provide evidence of the minimum academic qualification prescribed on or before their enrolment to the first semester M.Sc. Econometrics and Financial Technology examination of CUSAT to be held for the same batch of students. If they fail to do so they shall be removed from the rolls.

1.3 Admission to the M.Sc. Econometrics and Financial Technology shall be based on the scores obtained by the candidate in the CAT conducted by the University. The questions for the CAT are of multiple choices from Economics (40%), mathematics and Statistics (30%) Finance (20 %) remaining general awareness.

1.4 There shall be 20 seats for the general category, 3 seats shall be reserved for foreign candidates recommended by the Government of India. 4 seats can be allotted to NRI who qualify the entrance test and satisfy the other qualifications prescribed for the degree. Also 2 supernumerary seats shall be reserved for candidates with industry experience of minimum one year.

1.5 Reservation rules applicable to nonprofessional courses in Kerala as laid down by the State Government from time are applicable in the case of admission to the degree.

1.6 Payment of fees: Fees for the programme must be paid as prescribed by the University.

1.7 Re-admission to the programme shall be permitted only if the candidate satisfies the conditions laid down by the University and with permission of the Registrar.

2. COURSE STUDY:

2.1. The course work for the M.Sc. Econometrics and Financial Technology degree shall be in accordance with the schemes of examination and syllabus prescribed. The course shall extend over a period of two academic years comprising of four semesters. Each semester shall extend over a period of 16-18 weeks.

2.2 The minimum attendance required by the candidate shall be 75 %.

3. SCHEME OF STUDIES:

A minimum of 82 (Eighty-two) credits shall be offered during the four semesters.

3.1. Core course: Core courses are Mandatory courses for all students pursuing a particular program or degree. These courses are foundational courses that provide a broad and comprehensive understanding of the subject matter. Core courses are designed to ensure that all students have a common understanding of the fundamental concepts and principles of the field of study.

3.2. Electives: Elective courses are courses that students can choose to take from a list of optional courses in addition to the core courses. Elective courses allow students to tailor their education to their interests and goals, and to explore specific topics in more depth.

The student is required to take at least one elective from the fintech track in both the 3rd and 4th semesters.

3.3. Audit Course: Course that can be opted by the student and does not carry any credit.

3.4. Capstone project: In the second semester, a capstone project with 1 credits is introduced to get the hands-on experience. the capstone project might involve applying econometric and financial modeling techniques using Python to a real-world problem or data set. The continuous assessment consists of two components: 50% of the marks are allocated for the internal report, and the remaining 50% are allocated for the viva voce. The project includes a detailed report that documents the problem being addressed, the design of the solution, the development process, and the results of the project. The students also have to attend a viva voce. The student will be eligible for the viva only if the supervising faculty approves and recommends it.

3.5. Project Report and Viva Voce: In the fourth semester there shall be a project report and viva voce. The Project Report is equivalent to **3 (three)** credits. The Viva Voce examination is based on a presentation made by candidate in the department with an external expert. The continuous assessment consists of two components: 50% of the marks are allocated for the project report, and the remaining 50% are allocated for the viva voce.

3.6. Internship: Internship has to be completed before the Third-semester examination.

The assessment criteria for the internship will be based on the internship report submitted by the students. The student shall submit a detailed report of their internship experience, including the projects they have worked on, the techniques they have used and the insights they gained. The students can provide examples

of the data analysis projects they have worked on to analyse their ability to use the statistical software, data analysis tools and programming language. They can also submit copies of reports or presentations they created during the internship. The student should also submit an experience certificate from the internship supervisor.

The internship is an opportunity for the students to get a work-integrated learning where they can apply their theoretical knowledge and skills in a workplace setting. This helps to close the gap between the students' skills and job market requirements and equip the graduates better.

3.7. Students shall also do the MOOC Courses with 6 credits in total, the students will have to choose from the pool of courses offered by SWAYAM/NPTEL so that they complete courses that add up to 6 credits. They are allowed to take 3 courses of 2 credits each **or** 2 courses of three credits each **or** a combination of one course of 4 credits and another course of 2 credits.

4. **SEMESTER GRADE-TRANSCRIPT**

The University under its seal shall issue a semester Grade transcript to the students on completion of each semester. The semester Grade transcript shall contain the following:

a. Title of the course taken as core, elective and audit, (An audit course shall be listed only if he student has secured a pass).
b. Title of the online course.
c. Title of the Major project if any.
d. The credits associated with and the grades awarded for each course,
e. The number of credits (core and elective separately) earned by the student and the Grade Point Average.
f. The total credits (core and elective) earned till that semester.

The following grading system shall be adopted for all the programs, The following grades will be awarded based on the overall performance in each subject.

Range of Marks Grades	**Grades**	**Weightage**
90 and above	S-Outstanding	10
80 to 89	A-Excellent	9
70 to 79	B-Very good	8
60 to 69	C-Good	7
50 to 59	D-Satisfactory	6
Below 50%	F-Failed	0

Overall performance at the end of the semester will be indicated by Grade Point Average (GPA) calculated as follows.

$$GPA = \frac{G1CI+G2C2+G3C3+\ldots\ldots\ldots\ldots..GnCn}{C1+C2+C3+\ldots\ldots\ldots\ldots\ldots\ldots.Cn}$$

'G' refers to the grade weightage and 'C' refers to the credit value of the corresponding course undergone by the student, At the end of the final semester Cumulative Grade Point Average (CGPA) will be calculated based on the above formula, considering the Credits and Grades earned during the entire programme of study.

Classification for the Degree/ Diploma will be given as follows based on CGPA:

First Class with distinction	8 and above
First Class	6.5 and above
Second class	6 and above

The semester Grade Transcript issued at the end of the final semester shall contain the details of all the courses taken which shall include the titles of the courses, credits associated with each course, the CGPA and the class.

The CGPA to percentage conversion may be done via the formula

%marks = (CGPA – 0.5)*10

SEMESTER - I

Course Code	Title of Paper	Core/ Elective	Credits	Contact Hours/ Week	Continuous evaluation marks	End Semester Marks	Total Marks
23-345-0101	Micro economics	C	4	4	50	50	100
23-345-0102	Macroeconomics	C	4	4	50	50	100
23-345-0103	Mathematics for Economics and Finance	C	4	4	50	50	100
23-345-0104	Statistics for Economics and Finance	C	4	4	50	50	100
23-345-0105	Financial Economics	C	4	4	50	50	100
23-345-0106	Financial Reporting and Analysis (Audit Course)	C					
TOTAL CREDITS FOR FIRST SEMESTER = 20				20			

SEMESTER – II

Course Code	Title of Paper	Core/ Elective	Credits	Contact Hours/ Week	Continuous evaluation marks	End Semester Marks	Total Marks
23-345-0201	Advanced Macroeconomics	C	4	4	50	50	100
23-345-0202	Corporate Finance	C	4	4	50	50	100
23-345-0203	Econometrics	C	4	4	50	50	100
23-345-0204	Security Analysis and Portfolio Management	C	4	4	50	50	100
23-345-0205	Behavioral Finance	C	4	4	50	50	100

23-345-0206	PythonLab I	C	1	2	100		
23-345-0207	Capstone Project	C	1	2	100		
TOTAL CREDITS FOR SECOND SEMESTER = 22				24			

SEMESTER – III

Course Code	Title of Paper	Core/ Elective	Credits	Contact Hours/ Week	Continuous evaluation marks	External Evaluation Marks	Total Marks
23-345-0301	Applied Econometrics	C	4	4	50	50	100
23-345-0302	Fintech I	C	4	4	50	50	100
23-345-0303	Research Methodology	C	4	4	50	50	100
23-345-0304	PythonLab II	C	1	2	100		
23-354-0305	Internship		2		100		
23-345-0306	Major Issues in Indian Economy with Special Reference to Kerala	Audit course					
	Elective	E	3	3	50	50	100
	Elective	E	3	3	50	50	100
TOTAL CREDITS FOR THIRD SEMESTER = 21				20			

SEMESTER - IV

Course Code	Title of Paper	Core/ Elective	Credits	Contact Hours/ Week	Continuous evaluation marks	External Evaluation Marks	Total Marks
23-345-0401	Project Report and Viva Voce	C	3	2	-	100	100
23-345-0402	PythonLab III	C	1	2	50		
23-345-0403	Fintech II	E	3	3	50	50	100
	Elective	E	3	3	50	50	100
	Elective	E	3	3	50	50	100
	MOOC Courses	E	6				
TOTAL CREDITS FOR FOURTH SEMESTER = 19				13			

Total Eighty-two credits. PG Regulations of CUSAT is applicable to this programme.

List of Electives

CODE	**SEMESTER III**
20-372-0411	Financial Derivatives and Risk Management

23-345-0307	Asset Pricing: Theory and Practice
23-345-0308	Artificial Intelligence and Blockchain Technology
23-345-0309	Digital Banking and Payments
23-345-0310	International Finance
23-345-0311	Game Theory
	SEMESTER IV
23-345-0404	Investment Banking Services
23-345-0405	Data Analytics
23-345-0406	Financial Econometrics
23-345-0407	Panel Data Econometrics
23-345-0408	Multivariate Methods
23-345-0409	Budgetary Analysis and Fiscal Management in India
23-345-0410	Fiscal Federalism: Theory and Practice with Special Reference to Kerala
23-345-0411	Public Economics
23-345-0412	Public Choice and Policy
23-345-0413	Insurance Economics
23-345-0414	Fintech Venture Management and Entrepreneurship

Credit Distribution Semester wise

Semester	Credits
1	20
2	22
3	21
4	19
Total credits	82

Total eighty-two credits. PG Regulations of CUSAT is applicable to this programme.