Madras School of Economics
&
Central University of Tamil Nadu

Admission to M.A. Programs (2017-18)
in

(i)	**Actuarial Economics**
(ii)	**Applied Quantitative Finance**
(iii)	**Environmental Economics**
(iv)	**Financial Economics**
(v)	**General Economics**

These programs are offered at the Madras School of Economic, Chennai, in collaboration with Central University of Tamil Nadu (CUTN), Thiruvarur.

Programmes

Madras School of Economics (MSE) invites applications for admission to 2-Year (4 Semesters) M.A. Programs in (i) General Economics, (ii) Applied Quantitative Finance, (iii) Financial Economics (iv), Actuarial Economics and (v) Environmental Economics offered in collaboration with Central University of Tamil Nadu (CUTN), Thiruvarur. These programs are designed to develop well trained (i) Economists equipped with a wide range of skills and tools for *quantitative* analysis and give better understanding of the basic theory and how it is being played out in real economies; (ii) Financial practitioners with a good foundation in economics, mathematics, statistics and also well trained in the emerging theoretical and empirical tools for a better understanding of the sector (iii) Financial Analysts with strong training in quantitative economics and finance, (iv) Actuaries with a strong background in economics, insurance, finance, and actuarial mathematics, (v) Environmental Economists with training in applied quantitative techniques for addressing environmental issues. The successful candidates will cater to the growing demand for actuaries, financial practitioners, environmental managers, financial analysts/analytics, and economists in the fast growing insurance, health, national/multi-lateral environmental agencies, and financial services.

Background

M.A. Actuarial Economics: The Insurance sector in India is growing at a fast rate. Qualified Actuaries are in high demand as there is considerable shortage of trained Actuaries in India. A well qualified actuary has to be an expert in applying mathematical, statistical and economic analysis to a wide range of decision-making

processes in the fields of insurance, retirement and other benefits, and investments. The M.A. Actuarial Economics program offered jointly by CUTN and MSE is designed keeping in mind the courses and syllabi prescribed by the Institute of Actuaries of India. The elective courses include: applied econometrics, advanced techniques in finance, health economics, stochastic models, and survival models.

M.A. Applied Quantitative Finance: There has been an exponential increase in the demand for qualified financial analysts. Qualified financial analysts should have the ability to adequately capture stylized facts in financial markets through effective models, and the ability to estimate and evaluate the models. The M.A. Applied Quantitative Finance aims to develop such skilled financial analysts. The program is geared towards presenting the central concepts in clear, analytical, mathematical and computational detail with an emphasis on the underlying intuition. In addition, Business Case Studies would be provided wherever it is necessary. The elective courses include applied econometrics, stochastic models, advanced techniques in finance, financial instruments and markets, and artificial neural networks.

M.A. Environmental Economics: Concerns about over-exploitation of resources and degradation of environment have been on rise in India and other countries over the past fifty years. High economic growth often comes at the cost of environmental degradation as seen in several countries and hence careful attention to sound environmental policies is extremely important if India were follow sustainable development path. Businesses world over have also started understanding the importance of doing 'green' business. The objective of the M.A. Environmental Economics is to provide students with rigorous and specialized training in economics of the environment. The elective courses include: applied econometrics, social cost benefit analysis, energy economics, trade and environment and global climate change.

M.A. Financial Economics: The core courses lay the foundations for the basic theory and give students a feel for how it is being played out in real economies. The courses in Statistics, Mathematical Methods, Econometrics and Applied Econometrics equip them with a good range of skills and tools for quantitative analysis. In addition, a range of one-semester elective courses to choose from are offered in the following specialized subjects- Risk Management, Investment Banking, Financial Regulation and Banking Supervision, Games and Information, Stochastic Models, Economics of Insurance, Empirical Methods in Finance.

M.A. General Economics: The core courses lay the foundations for the basic theory and give students a feel for how it is being played out in real economies. The courses in Statistics, Optimization Techniques, Econometrics and Applied Econometrics equip them with a good range of skills and tools for quantitative analysis. The compulsory course in Fiscal and Public Policy provides a unique opportunity to understand the policy prescriptions for a developing country like India. In addition, depending on the demand, courses on subfields like Development Economics,

Financial Economics, Health Economics, Games and Information, Industrial Economics, Agricultural Economics, Indian Economic Development, International Trade and so on are offered as electives.

All five M.A. Programs provide a valuable opportunity for the students to enhance their computation skills by learning econometric applications using soft wares such as EVIEWS and STATA. Almost all courses are analytical in nature involving application of mathematical, statistical, and econometric analyses. All the five programs emphasize independent research. Under a Choice Based Elective scheme, students in the second year have options to take courses offered in any of the other streams of study, beyond the one which they will receive the degree in, subject to availability of seats and their completion of any pre-requisites. Students are required to do term papers in most of the courses. Interested students take up a summer internship program at the end of the first year, which greatly helps them to get an orientation in applied work. The students have an option to undertake a dissertation in the second year to encourage active learning in a real life situation.

Examination System

All courses will follow the evaluation rules as per M.A. rules and regulations of CUTN. That is, all courses will have both internal and end-semester evaluations.

Five year Integrated Master's Programme in Economics

A five-year integrated Master's programme in Economics in collaboration with CUTN is offered from the academic year 2015-16. In the first three years, students are trained at CUTN, Thiruvarur and for the remaining two years students study at MSE. Students can opt for an exit option after three years along with an undergraduate degree (BA-Honors) after successful completion of the courses and examination requirements for the first three years. The students who want to continue with the five-year program would have a choice of pursuing their Masters program at CUTN or at MSE. If they choose to be at MSE then they have a choice between any one of the five post-graduate courses taught at MSE for their specialization.

Seat Distribution:
Based on the number of students from IMSc the number of seats per stream is calculated as below:
Seats per stream = Total number of students / number of streams.
The degree will be awarded by the CUTN to students who successfully complete the approved teaching program in economics including the integrated program and two-year post graduate programs at MSE.

About Madras School of Economics

Madras School of Economics has been offering 2-Year M.A. programs in (i) General Economics, (ii) Financial Economics, (iii) Actuarial Economics, (iv) Applied Quantitative Finance and (v) Environmental Economics and 5-year Integrated M.A. program in Economics in collaboration with the Central University of Tamil Nadu. Earlier it offered M.A. Economics and M.A. Financial Economics in collaboration with Anna University and other three Masters programs with Indira Gandhi National Open University. All these M.A. courses are recognized as advanced courses by the academic circle and the market. Campus recruitment takes place in the second year by various leading businesses and other institutions. The main organizations that participated in the campus recruitment for the current batch include Absolut Data, Accenture, Bridge-i2i, CitiBank, Ernst & Young, Ford, HCL, HDFC, HSBC,IBM, IGATE, InRhythm, J.P Morgan, Latent View, MuSigma, RBS, Royal Sundaram, Scienaptic, Smart Cube, Target,TCS, TVS, Dunnhumby, IBM, TATA CAD, Deloitte, Crisil, Cognizant

The offered salary ranges between Rs. 4.5 lakh to Rs.12 lakh.

MSE has highly qualified faculty, a well endowed library and a computer centre. MSE subscribes to Science Direct, Jstor, Ebsco-Econlit (full text), Indiastat.com, - CMIE-Prowess, Economist, EPW and has access to more than seven hundred international journals in economics, finance, insurance and environment. For further details, please visit the MSE website at www.mse.ac.in.

Number of Seats

For M.A. Actuarial Economics and M.A. Environmental Economics the number of intake is 30 each. For the other three programs, the number of intake is 50 each. The total seats for five programs are 210.

Eligibility

Any graduate of a recognized University with a minimum of 55% marks for general category, 50% marks for OBC (Non-creamy Layer), 45% marks for SC/ST/PWD Candidates and had studied Mathematics at plus two level.

Application and Basis of Selection

Admission will be based on common entrance test at designated centres in India and counseling at MSE. Reservation of seats will be as per the Government of India norms. The application form along with program brochure can be downloaded from www.cutn.ac.in; https://cucet2017.co.in/WebPages/StaticPages/Home.aspx

Hostel Facility

Madras School of Economics offers hostel facility to outstation candidates (separately for boys and girls), subject to availability. Those who need hostel accommodation at MSE should send separate application to The Administrative Officer, MSE, Gandhi Mandapam Road, Chennai – 600 025.

Important Dates.

S.No	Description	Date
1.	Opening of online Application Form for all programs	20-March-17
2.	Closing of online Application Form for all programs	14-April-17
3.	Issue of Admit Cards	5-May-17
4.	Exam Dates	17-18 -May-17
5.	Answer Key upload	19- May-17
6.	Grievances, if any, upto	05.00p.m. on 22-May-17
7.	Corrected answer key ready	29-May-17
8.	Result Declaration	7-June-17

For payment through online/debit/credit card no extra charges are to be paid by the candidates

The bank will not accept any fees after 14th April 2017.

ENTRANCE EXAMINATION_MODEL

CUTN – MSE

The Entrance Examination will have 100 questions to be completed in 120 minutes. There are two parts – Part A and Part B.

PART A (25 questions)

PART B (75 questions)

For more details refer the link:
https://cucet2017.co.in/WebPages/StaticPages/Syllabus.aspx

Mathematics – Sample Questions

1.	Find the third order derivative of $Y = 5X^3$: ☐ (a) 30 ☐ (b) $15X^2$ ☐ (c) $30X$ ☐ (d) $5X^2$
2.	$A = \begin{bmatrix} 0 & 0 & 0 \\ 1 & 2 & 3 \\ 2 & 3 & 4 \end{bmatrix} \quad B = \begin{bmatrix} 1 & -2 \\ -1 & 0 \\ 2 & 1 \end{bmatrix} \quad$ Find AB ☐ (a) $\begin{bmatrix} 0 & 0 \\ 5 & 1 \\ 7 & 0 \end{bmatrix}$ ☐ (b) $\begin{bmatrix} 1 & -2 \\ 3 & -5 \\ 4 & 9 \end{bmatrix}$ ☐ (c) $\begin{bmatrix} 3 & -2 \\ 6 & -5 \\ 5 & -7 \end{bmatrix}$ ☐ (d) $\begin{bmatrix} 2 & -2 \\ 5 & 3 \\ 7 & 4 \end{bmatrix}$
3.	$\lim\limits_{x \to 5}(3x^3 + 5x^2 - 2x + 3)$ equals: ☐ (a) 439 ☐ (b) 493 ☐ (c) 394 ☐ (d) 934

4.	If $A = \begin{pmatrix} 2 & 3 & 1 \\ 3 & 4 & 1 \\ 3 & 7 & 2 \end{pmatrix}$ then A⁻¹A is			
	☐ (a) 0	☐ (b) A	☐ (c) I	☐ (d) A²
5.	The point in the interval [3, 5] is			
	☐ (a) 3	☐ (b) 5.3	☐ (c) 0	☐ (d) 4.35

Statistics – Sample Questions

6.	Probability of sure event is			
	☐ (a) 1	☐ (b) 0	☐ (c) -1	☐ (d) S
7.	A single letter is selected at random from the word PROBABILITY The probability that it is not a vowel is			
	☐ (a) 3/11	☐ (b) 2/11	☐ (c) 4/11	☐ (d) 0
8.	If A and B are independent event, then P(A ∩ B) is			
	☐ (a) P(A) P(B)	☐ (b) P(A) + P(B)	☐ (c) P(A/B)	☐ (d) P(B) - P(A)
9.	Which expression gives the probability $P\left(\frac{1}{2} < X < 1\right)$ using $F(x)$, given 0<x<1			
	☐ (a) $P\left(\frac{1}{2} < X < 1\right) = F\left(\frac{1}{2}\right) - F(1)$		☐ (b) $P\left(\frac{1}{2} < X < 1\right) = F(1) - F\left(\frac{1}{2}\right)$	
	☐ (c) $P\left(\frac{1}{2} < X < 1\right) = F(1) + F(\frac{1}{2})$		☐ (d) $P\left(\frac{1}{2} < X < 1\right) = F(1) - F(0)$	
10.	If a constant value 4 is subtracted from each observation of a set, the value of the variance is			
	☐ (a) reduced by 4	☐ (b) reduced by 16	☐ (c) reduced by 2	☐ (d) unaltered

Advanced Mathematics – Sample Questions

11.	Let $A = \begin{bmatrix} 1 & 2 & 3 \\ 1 & 0 & -1 \\ 3 & 4 & 5 \end{bmatrix}$. Which of the following is true?	
	☐ (a) A is invertible since det(A) = 0	☐ (b) A is not invertible since det(A) = 0
	☐ (c) A is invertible since det(A) ≠ 0	☐ (d) A is not invertible since det(A) ≠ 0
12.	Which of the following polynomials leaves a reminder when divided by *x+2*?	
	☐ (a) *r(x) = (x+2)¹²* ☐ (d) *p(x) = x² – 4* ☐ (c) *s(x) = x⁴ + 3x² + 1* ☐ (d) *q(x) = -x³ +*	

	$8x^2 + 3x - 34$
13.	The characteristic roots of the matrix $A = \begin{pmatrix} 6 & 6 \\ 6 & -3 \end{pmatrix}$ are: ☐ (a) Both positive ☐ (b) Both negative ☐ (c) One positive and one negative ☐ (d) None of the above
14.	The value of $\lim_{x \to \infty} \left(\sqrt{x^2 + 1} - \sqrt{x^2 - 1} \right)$ is ☐ (a) -1 ☐ (b) 1 ☐ (c) 0 ☐ (d) none of these
15.	At compound interest if a certain sum of money doubles in n years then the amount will be four fold in ☐ (a) $2n^2$ years ☐ (b) n^2 years ☐ (c) 4n years ☐ (d) 2n years

Economics – Sample Questions

16.	The classical *Quantity Theory* of *Money* assumes that: ☐ (a) income is constant. ☐ (b) velocity is constant. ☐ (c) prices are constant. ☐ (d) the money supply is constant.
17.	Assume that apples cost Rs.0.50 in 2002 and Re.1 in 2007, whereas oranges cost Re.1 in 2002 and Rs.0.50 in 2007. If 10 apples and 5 oranges were purchased in 2002, and 5 apples and 10 oranges were purchased in 2007, the CPI for 2007, using 2002 as the base year, is: ☐ (a) 0.75. ☐ (b) 0.80 ☐ (c) 1 ☐ (d) 1.25
18.	The aggregate demand curve tells us possible: ☐ (a) combinations of *M* and *Y* for a given value of *P*. ☐ (b) combinations of *M* and *P* for a given value of *Y*. ☐ (c) combinations of *P* and *Y* for a given value of *M*. ☐ (d) results if the Federal Reserve reduces the money supply.
19.	Assume that we have a demand curve of the form $\ln q = a - b \ln p$. Then the elasticity of demand is ☐ (a) Always increasing with p ☐ (b) Decreasing with p ☐ (c) Constant ☐ (d) None of the above.
20.	In the Kinked Demand Curve Model, suppose MC curve shifts upward in the discontinuous range of MR curve. Which one of the following is correct? At equilibrium, ☐ (a) price rises but quantity remains the same ☐ (b) price and quantity both remain the same ☐ (c) quantify rises but price remains the same ☐ (d) price and quantity both rise