



UNIVERSITY OF CALICUT

Abstract

General and Academic IV - Faculty of Humanities - BA Econometrics and Data Management programme - Corrected scheme , w e f 2020 admission onwards -Implemented- Orders Issued.

G & A - IV - B

U.O.No. 6882/2023/Admn

Dated, Calicut University.P.O, 20.04.2023

- Read:-*1. U.O. No.19440/2022/Admn dated 14.10.2022 .
2. Item No 1 of the minutes of the combined meeting of Board of Studies in Economics UG and Computer Science UG held on 11.05.2022
3. Item No 20 of the minutes of the meeting of the Faculty of Humanities held on 11.11.2022.
4.Item No II D of the minutes of the LXXXIV meeting of the Academic Council held on 15.12.2022.
5. Orders of the Vice Chancellor in the file No 7251/GA-IVC-B1/2013/CU dated 29.12.2022.

ORDER

1. The Scheme and Syllabus of BA Econometrics and Data Management programme in tune with the CBCSS UG Regulation 2019, for affiliated Colleges has been implemented, with effect from 2020 admission onwards , vide paper read as (1) above.
2. The combined meeting of the Board of Studies in Economics UG and Computer Science UG held on 11.05.2022 , vide paper read as (2) above, has resolved to approve correction in the scheme of BA Econometrics and Data Management Programme, pertaining to the Complementary courses, w e f 2020 admission onwards.
3. The Faculty of Humanities, vide paper read (3) above, has approved the above decision of the combined meeting of the Board of Studies in Economics UG and Computer Science UG held on 11.05.2022.
4. The Academic Council held on 15.12.2022, vide paper read as (4) above has approved the item No 1 of the minutes of the combined meeting of the Board of Studies in Economics UG and Computer Science UG held on 11.05.2022, as approved by the Faculty of Humanities.
5. The Vice Chancellor, vide paper read as (5) above has approved the above decision of the Academic Council , and accorded sanction to implement the corrected scheme of the BA Econometrics and Data Management programme w e f 2020 admission onwards.
6. The Corrected Scheme of the BA Econometrics and Data Management programme for affiliated Colleges is thus implemented, with effect from 2020 admission onwards.
7. Orders are issued accordingly (The Corrected Scheme and the Syllabus of the BA Econometrics and Data Management programme is appended).

Ajayakumar T.K

Assistant Registrar

To

The Principals of Affiliated Colleges

Copy to: PS to VC, PA to Registrar, GA I F Section,PA to Controller of Examinations, JCE II , JCE IX , EX, EG, Digital Wing , SF, DF,FC.

Forwarded / By Order

Section Officer



UNIVERSITY OF CALICUT

Abstract

General and Academic- Faculty of Humanities - Scheme and Syllabus of BA Econometrics and Data Management programme in tune with the CBCSS UG regulation 2019, for affiliated Colleges with effect from 2020 admission onwards - Implemented-Subject to ratification by the Academic Council - Orders Issued.

G & A - IV - B

U.O.No. 19440/2022/Admn

Dated, Calicut University.P.O, 14.10.2022

*Read:-*1. U.O. No. 225/2022/Admn dated 04.01.2022.

2. Item No 1 of the minutes of the meeting of Board of Studies in Economics UG held on 26.08.2022.

3. Remarks of the Dean , Faculty of Humanities dated 29.09.2022.

4. Orders of the Vice Chancellor dated 01.10.2022.

ORDER

1. The Scheme and Syllabus of I and II Semester BA Econometrics and Data Management programme in tune with the CBCSS UG Regulation 2019, for affiliated Colleges has been implemented, with effect from 2020 admission onwards , vide reference cited as (1) above.
2. The meeting of the Board of Studies in Economics UG, vide paper read (2) above, has resolved to approve the syllabus of III to VI semesters of the BA Econometrics and Data Management Programme, with effect from 2020 admission onwards.
3. The Dean, Faculty of Humanities, vide paper read (3) above, has approved the above decision of the Board of Studies in Economics (UG), held on 26.08.2022.
4. The Vice Chancellor, vide paper read as (4) above, has approved item No 1 of the minutes of the meeting of the Board of Studies in Economics UG held on 26.08.2022, as approved by the Dean Faculty of Humanities and has accorded sanction to implement the syllabus of III to VI semesters of the BA Econometrics and Data Management Programme, with effect from 2020 admission onwards.
5. The Scheme and Syllabus of BA Econometrics and Data Management programme in tune with the CBCSS UG Regulation 2019, for affiliated Colleges is thus implemented, with effect from 2020 admission onwards.
6. Orders are issued accordingly (I to VI Syllabus appended).

Ajitha P.P

Joint Registrar

To

The Principals of Affiliated Colleges

Copy to: PS to VC, PA to Registrar, GA I F Section,PA to Controller of Examinations, JCE II , JCE IX , EX, EG, Digital Wing , SF, DF,FC.

Forwarded / By Order

Section Officer

**OUTCOME BASED CURRICULUM FOR UNDER GRADUATE (UG)
PROGRAMME**



**Scheme and Syllabus
For**

**BA ECONOMETRICS AND DATA MANAGEMENT
PROGRAMME
(2020 Admission onwards)**

**Under
Calicut University Regulations Choice Based
Credit and Semester System For Under Graduate
(UG) Curriculum-2019 (CBCSS UG 2019)**

Foreword

Economics is about *choice* and the impact of our choices on each other. It relates to every aspect of our lives, from the decisions we make as individuals or families to the structures created by governments and firms. The economic way of thinking can help us make better choices. An undergraduate degree in economics seeks to educate students about how choices are made by consumers, workers and firms, and how these decisions aggregate into economy-wide phenomena. At the same time, one should remember that Economics is not primarily a collection of facts to be memorized, though there are plenty of important concepts to be learned. The very subject of economics is divided into different branches for better understanding. Econometrics is one of the branches of economics which uses a mixed language of statistics, mathematics and economics to convey the relevant economic and business events.

Econometrics is the quantitative application of statistical and mathematical models using data to develop theories or test existing hypotheses in economics and to forecast future trends from historical data. Econometric analysis provides important inputs into the economic decision making process and it aims at analysing, estimating and forecasting the events which are important for day today economics and business. Econometric models are power tools that can drive the business ahead, helping in smarter decision making, optimisation of costs and better understanding of consumer demands. The subject econometrics is sought by many as the subject is getting more importance in the modern industrial economies. This fact has recognized by the Dr. Sabu Thomas Committee, which was asked to recommend new programmes to the universities and colleges in the state and the committee suggested econometrics and data management as one of the new generation programmes. The subject econometrics is introduced here with the complementary courses namely; data management and statistics. These combinations will strengthen the foundation of graduate students in their academic and career growth.

The finalization of current curriculum is the result of various deliberations and personal communications with the experts and resource persons in the branch of Economics, Statistics and Computer science in and outside the university. I thank one and all for bringing out new Syllabus for UG Econometrics and data management of University of Calicut. A special thanks to the honourable Board of Studies Members, whose efforts and support has made the task easy. I request the student body to make use of the curriculum and Syllabus for your better future.

KABEER K.T

Chairperson (UG Board of Economics)

LIST OF MEMBERS OF BOARD OF STUDIES IN ECONOMICS UG

The existing curriculum is prepared by the following UG board members of economics.

Sl. No	Name	Address
1	Sri. KABEER K.T. (Chairperson)	Assistant Professor of Economics, Govt. Arts & Science College, Kozhikode
2	Dr. Hyderali K	Asst. Professor of Economics, Govt. College Malappuram
3	Dr. Rafeeq V.H.	Associate Professor of Economics, KKTM Govt. College, Pullut, Kodungallur.
4	Dr. Rajimol M.S.	Asst. Professor of Economics, NMSM Govt. College Kalpetta
5	Dr. Raseena K.K.	Asst. Professor of Economics, SCAM G C Kuttanallur Thrissur
6	Dr. Jins Varkey	Asst. Professor of Economics St Aloysius College, Elthuruth
7	Dr. Anooja Chacko	Assistant Professor of Economics , Zamorin 's Guruvayurappan College, Calicut
8	Dr. Pramod K. M.	Assistant Professor of Economics, Ambedkar Arts and Science College Vandoor
9	Sri. Suresh Babu P.	Assistant Professor of Economics, NSS College, Nenmara
10	Smt. Vijayalakshmi K.K.	Assistant Professor of Economics,VTB College, Mannampatta
11	Dr. Shyjan D. (Ex-officio member)	PG Board Chairperson & Registrar, Malayalam University, Thirur.

University of Calicut

**CURRICULUM FOR BA ECONOMETRICS AND DATA MANAGEMENT
PROGRAMME (CBCSS UG 2019)
(w e f 2020 Admission onwards)**

Aims and Objectives:

BA Econometrics and Data Management is a three-year full-time UG programme. Econometrics is a social science in which the tools and technique of Mathematics, and statistics are applied to the analysis of economic theories for business forecast. Data Management is an administrative process to access, extract, modelling, update, process and disseminating the required data. This programme provides a blend of these two subjects and brings forth the students as globally competent business data analysts and academicians.

The programme emphasizes, learning of economic theory and practical understanding of econometric and statistical methods for analysing of economic data. The programme suits anyone who intends to work in a data analysis environment or pursue research degrees leading to academic positions in institutes of excellence in India and abroad. It offers great employment potential in a data driven world. The programme aims to fill the gap in the supply of trained data analysts in the job market.

Programme Outcomes:

The learners are expected to demonstrate the following:

- Critically evaluate and apply the theories and techniques of economics.
- Demonstrate subject-specific ‘thinking’ skills that are readily transferable to problem solving and decision making in a wider context.
- Enhance their lifelong learning, employing a range of practical and professional skills.
- Find, evaluate, synthesize and use information from a variety of sources
- Articulate an awareness of the social and community contexts within their disciplinary field

Eligibility for admission:

Any candidate who passed Plus Two of the Higher Secondary Board of Kerala or equivalent examinations of any other University or Board of Examinations in any state recognized as equivalent to Plus Two of the

Higher Secondary Board in Kerala. However, the candidates who have studied Economics/mathematics/statistics for the qualifying examinations shall be given weightage while calculating the index marks for admission.

Indexing: The candidates who have studied Economics/ Mathematics/ Statistics/ Computer Application/ Computer Science for the qualifying examinations will be given some weightage while calculating the index marks for the admission of BA Econometrics and data Management programmes.

A weightage of 50 marks will be given for those students who have studied the subject Economics in Plus Two under the Higher Secondary Board of Kerala or equivalent examinations of any other University or Board of Examinations in any state recognized as Equivalent to Plus Two of the Higher Secondary Board in Kerala.

A weightage of 25 marks will be given for the subjects namely; Mathematics/ Statistics/Computer Application/ Computer Science in HSE or equivalent with a maximum ceiling marks of 25 in the case of students with more than one of the above subjects (Mathematics/ Statistics/ Computer Application/ Computer Science)

A students with Economics in Plus Two and the combinations with Mathematics/ Statistics Computer Application/ Computer Science are eligible for a maximum weightage of 75 marks.

Medium of Instruction and Examination: ENGLISH

Duration of the programme:

The duration of BA Econometrics and Data Management programme is three academic years with six semesters

Course Structure:

1. Course Structure

The UG programme shall include five types of courses, viz; Common Courses (Code A), Core courses (Code B), Complementary courses (Code C), Open Course (Code D) and Audit courses (Code E).

2. Common Courses: In general, every UG student shall undergo 10 common courses (total 38 credits) chosen from a group of 14 common courses listed in the UG Regulation, for completing the programme.

3. Core Courses: Core courses are the courses in the major (core) subject of the degree

programme chosen by the student. There are 14 Core courses in the BA Economics programme.

4. **Complementary courses:** Complementary courses cover one or two disciplines that are related to the core subject and are distributed in the first four semesters. There shall be one complementary course in a semester for B.A Programmes. The complementary courses in first and fourth semester (Type 1) shall be the same. Similarly the complementary courses in second and third semester (Type 2) shall be the same. The college can choose any complementary course either in Type 1 or in Type 2 for a programme. Once they choose the complementary courses that should be intimated to the university. If a college wants to change the complementary course pattern (Type 1 or Type 2) prior sanction has to be obtained.
5. **Open courses:** Open courses are the courses offered by a department to the students of other departments. Students can select a course of their own choice offered by other departments. There shall be one open course in core subjects in the fifth semester. The open course shall be open to all the students in the institution except the students in the parent department. The students can opt that course from any other department in the institution. Each department can decide the open course from a pool of three courses offered by the University. Total credit allotted for open course is 3 and the hours allotted is 3. If there is only one programme in a college, they can choose either language courses or physical education as open course.

6. Elective Courses

Under the choice-based credit semester system, there is the provision of an elective course. The university offers three elective courses in the sixth semester of a programme and of which the college can choose one.

7. **Ability Enhancement courses/Audit courses:** These are courses which are mandatory for a programme but not counted for the calculation of SGPA or CGPA. There shall be one Audit course each in the first four semesters. These courses are not meant for class room study. The students can attain only pass (Grade P) for these courses. At the end of each semester there shall be examination conducted by the college from a pool of questions (Question Bank) set by the University. The students can also attain these credits through online courses like SWAYAM, MOOC etc (optional). The list of passed students must be sent to the University from the colleges at least before the fifth semester examination. The list of Audit courses in each semester with credits are given below.

Sl.No.	Course	Credit	Semester
1	Environment Studies	4	1

2	Disaster Management	4	2
3	*Human Rights/Intellectual Property Rights/ Consumer Protection	4	3
4	*Gender Studies/Gerontology	4	4

* Colleges can choose any one of the courses.

Altogether there will be 34 courses in the Programme with 14 Core Courses, 10 Common Courses, two Complementary Courses (spread over 4 semesters), one Elective course, one Open Course and four Audit Courses. In addition, there shall be a project work or a theory paper on Research Methodology in the Sixth semester. The Project work is to be handled by the Economics faculty in each college.

8. Credit Distribution of the Programme

A student is required to acquire a minimum of 140 credits for the completion of the UG Programme, of which 120 credits are to be obtained from class room study and shall only be counted for SGPA and CGPA. Out of the 120 credits, 38 (22 for common (English) courses plus 16 for common languages other than English) credit shall be from common courses, two credits for project/corresponding paper and three credits for the open course. The maximum credits for a course shall not exceed five. Audit courses shall have four credits per course and a total of 16 credits in the entire programme. The maximum credit acquired under extra credit shall be four. If more Extra Credit activities are done by a student, that may be mentioned in the Grade Card. Please remember that the credits of Audit courses and Extra credits are not counted for SGPA or CGPA. To have a better look at the credit distribution, refer the table below:

Table 2: Distribution of Credit among various courses, Semester-wise

Distribution of different course & their credit

Semester	Common Course	Core Course	Open Course	Elective Course
I	10	5	---	---
II	12	5	---	---
III	8	8	---	---
IV	8	8	---	---
V	---	16	3	---
VI	---	18	---	3
Total	38	60	3	3

Distribution of Credits of the Complementary courses

Name of Complementary course	Semester	No of Credits
Statistics -Data Management	I/II	4
Computer Science -Data Management	I/II	2
Statistics -Data Management	III/IV	4
Computer Science -Data Management	III /IV	2
Computer Science -Data Management Programming Lab	III/IV	4

In addition, there are 16 credits of Audit courses spread over the first four semesters and 4 extra credits as mandatory to complete the BA Econometrics and Data Management Programme.

Audit Course	4	1 6
Extra Credits(NCC/NSS /Swatch Bharath/CUSSP)		4
Total		1 4 0

A detailed break up of courses is presented in the below table.

The course code of 'BA Econometrics and Data Management' is 'EDM'

Semester 1				
Course	Course Code	Name of the Course	Hours	Credit
Common 1	A01	Common English Course I	4	3
Common 2	A02	Common English Course II	5	3
Common 3	A07(1)	Additional Language Course I	4	4
Core Course 1	ECO1 B01	Microeconomics I	6	5

Complementary 1(type 1)Course 1		Complementary 1(type 1)Course 1	6	
Audit Course	AUD1E01	Environment Studies	---	4
		Total	25	23

Semester 2				
Course	Course Code	Name of the Course	Hours	Credit
Common 4	A03	Common English Course III	4	4
Common 5	A04	Common English Course IV	5	4
Common 6	A08(1)	Additional Language Course II	4	4
Core Course 2	ECO2 B02	Macroeconomics I	6	5
Complementary 2(Type II)Course 1		Complementary 2 (Typ II) Course 1	6	
Audit Course	AUD2E0 2	Disaster Management	---	4
		Total	25	25
Semester 3				
Course	Course Code	Name of the Course	Hours	Credit
Common VII	A05	Common English Course V	5	4
Common VIII	A09	Additional Language Course II	5	4
Core 3	EDM3 B03	Mathematical Methods for Economics-I	5	4
Core 4	ECO3 B04	Microeconomics II	4	4
Complementary (Type 2-Course 2)		Complementary (Type 2-Course 2)	6	
Audit Course	AUD3E03	Human Rights/Intellectual Property Rights/ Consumer Protection	---	4
		Total	25	24
Semester 4				
Course	Course Code	Name of the Course	Hours	Credit
Common IX	A06	Common English Course VI	5	4
Common X	A10	Additional Language Course	5	4
Core 5	EDM4 B05	Mathematical Methods for Economics-II	4	4
Core 6	ECO4 B06	Macroeconomics II	5	4

Complementary (Type 1-Course 2)		Complementary (Type 1-Course 2)	6	
Audit Course	AUD4E04	Gender Studies/Gerontology	---	4
		Total	25	24

Semester 5

Course	Course Code	Name of the Course	Hours	Credit
Core 7	ECO5 B07	Fiscal Economics	5	4
Core 8 ⁱ	ECO5 B08	Indian Economic Development	6	4
Core 9	EDM5 B09	Economic Theory and Data	5	4
Core 10	EDM5B10	Basic Econometrics	6	4
Open Course		To be selected from any other Departments	3	3
		Total	25	19

Semester 6

Course	Course Code	Name of the Course	Hours	Credit
Core 11	EDM6 B11	Applied Econometrics	5	4
Core 12	ECO6 B12	International Economics	5	4
Core 13	EDM6 B13	Applied Financial Economics	5	4
Core 14	ECO6 B14	Economics of Growth and Development	5	4
Project	ECO6 B15	Project work	2	2
Elective Course(Choose one among the three)	EDM6 B16	Research Methodology	3	3
	ECO6 B17	Behavioural Economics		
	ECO6 B18	Urban Economics		
		Total	25	21

¹A compulsory study tour is recommended as part of the paper entitled "Indian Economic Development", in the Fifth Semester. The tour report should be submitted to the Head of the Department within two weeks of the tour

¹¹Encourage the use of database and '*appropriate*' statistical/mathematical/econometric methods learned in previous semesters for project work.

Distribution of courses in each semester

As per the UG regulation, the courses are distributed over various semesters. For the information of the stakeholders, the details are provided here with. The semester-wise distribution of courses for the completion of BA Economics Programme is given in the following Table

Course/Semester	I	II	III	IV	v	VI
Common	3	3	2	2	--	--
Core	1	1	2	2	4	4
Complementary	1	1	1	1	--	--
Audit/Ability enhancement	1	1	1	1	--	--
Open	--	--	--	--	1	--
Elective	--	--	--	--	--	1
Project	--	--	--	--	--	1
Total	6	6	6	6	5	6

Core Courses at a Glance

A glance at the core courses offered in the BA Economics is given in the table:

Semester	Course code	Name of Course
I	ECO1 B01	Microeconomics I
II	ECO2 B02	Macroeconomics I
III	EDM3 B03	Mathematical Methods for Economics-I
	ECO3 B04	Microeconomics II
IV	EDM4 B05	Mathematical Methods for Economics-II
	ECO4 B06	Macroeconomics II
V	ECO5 B07	Fiscal Economics
	ECO5 B08	Indian Economic Development
	EDM5 B09	Economic Theory and Data
	EDM5B10	Basic Econometrics
VI	EDM6 B11	Applied Econometrics
	ECO6 B12	International Economics
	EDM6 B13	Applied Financial Economics

	ECO6 B14	Economics of Growth and Development
	ECO6 B15	Project

Complementary Courses:

Colleges can choose from the complementary courses offered by the University without affecting the existing workload. The syllabus for complementary courses of sister departments are prepared by the respective Boards of studies. The following complementary courses are suggested for the BA Econometrics and data management programme.

- 1) Data Management
- 2) Statistics

Open Courses:

During the Fifth Semester three Open courses are offered to the students of other departments. Colleges can choose any one course from the three listed below.

1. Basic Econometrics
2. Economics in Everyday Life
3. Indian Financial System

Elective Courses:

During the Sixth Semester, three elective courses are offered for BA Economics Programme. Colleges can choose any one course from the three listed below.

1. Research Methodology
2. Behavioural Economics
3. Urban Economics

Project - ECO6 B15

As part of the requirements for BA Programme, regular students have an option to carry out a project either individually or as a group, under the supervision of a teacher. Project work is meant for providing an opportunity to approach and study a problem in a systematic and scientific manner. It provides them an opportunity to apply the tools they have studied and learn the art of conducting a study and presenting the report in a structured way. The report of the project, completed in every respect, is to be submitted to the department for valuation by the examiners appointed by the University.

Assessment and Evaluation

Mark system is followed instead of direct grading for each question. For each course in the semester letter grade and grade point are introduced in 10-point indirect grading system as per guidelines. The evaluation scheme for each course shall contain two parts: 1) Internal assessment 2) External Evaluation. 20% weight shall be given to the internal assessment. The remaining 80% weight shall be for the external evaluation.

Internal Evaluation:

The internal assessment shall be based on a pre-determined transparent system involving written tests, Class room participation based on attendance in respect of theory courses and lab involvement/records attendance in respect of Practical Courses. Internal assessment of the project will be based on its content, method of presentation, final conclusion and orientation to research aptitude. Components with percentage of marks of Internal Evaluation of Theory Courses are- Test paper 40%, Assignment 20%, Seminar 20% and Class room participation based on attendance 20%.

For the test paper marks, at least one test paper should be conducted. If more test papers are conducted, the mark of the best one should be taken. To ensure transparency of the evaluation process, the internal assessment marks awarded to the students in each course in a semester shall be notified on the notice board at least one week before the commencement of external examination. There shall not be any chance for improvement for internal marks. The course teacher(s) shall maintain the academic record of each student registered for the course, which shall be forwarded to the University by the college Principal after obtaining the signature of both course teacher and Head of the Department. The Split up of marks for Test paper and Class Room Participation (CRP) for internal evaluation are as follows.

Split up of marks for Test paper

Range of Marks in test paper	Out of 8 (Maximum internal marks is 20)	Out of 6 (Maximum internal marks is 15)
Less than 35%	1	1
35-45%	2	2
45-55%	3	3
55-65%	4	4
65-85%	6	5
85-100%	8	6

Split up of marks for Class Room Participation

Range of CRP	Out of 4 (Maximum Internal marks is 20)	Out of 3 (Maximum internal marks is 15)
$50\% \leq \text{CRP} < 75\%$	1	1
$75\% \leq \text{CRP} < 85\%$	2	2
85 % and above	4	3

External Evaluation

External evaluation carries 80% of marks. All question papers shall be set by the University. The external question papers may be of uniform pattern with 80/60 marks. The courses with 2/3 credits will have an external examination of 2 hours duration with 60 marks and courses with 4/5 credits will have an external examination of 2.5 hours duration with 80 marks. The external examination in theory courses is to be conducted by the University with question papers set by external experts. The project evaluation with viva can be conducted either internal or external which may be decided by the Board of Studies concerned. Guidelines are given in the syllabus.

After the external evaluation only marks are to be entered in the answer scripts. All other calculations including grading are done by the University.

Evaluation of Audit courses: The examination shall be conducted by the college itself from the Question Bank prepared by the University. The Question paper shall be of 100 marks of 3 hour duration. For SDE/Private students it may be of MCQ/ fill in the blank type questions or Online question paper may be introduced.

Method of Indirect Grading

Evaluation (both internal and external) is carried out using Mark system .The Grade on the basis of total internal and external marks will be indicated for each course, for each semester and for the entire programme. Indirect Grading System in 10 -point scale as depicted in the table. An aggregate of P grade (after external and internal put together) is required in each course for a pass and also for awarding a degree (A minimum of 20% marks in external evaluation is needed for a pass in a course. But no separate pass minimum is needed for internal evaluation). No separate grade/mark for internal and external will be displayed in the grade card; only an aggregate grade will be displayed. Also the aggregate marks of internal and external are not displayed in the grade card. A student who fails to secure a minimum grade for a pass in a course is permitted to write the examination along with the next batch.

Percentage of Marks (Both Internal & External put together)	Grade	Interpretation	Grade point Average (G)	Range of grade points	Class
95 and above	O	Outstanding	10	9.5-10.0	First Class with Distinction
85 to below 95	A+	Excellent	9	8.5 -9.49	
75 to below 85	A	Very Good	8	7.5 -8.49	
65 to below 75	B+	Good	7	6.5 -7.49	First Class
55 to below 65	B	Satisfactory	6	5.5 -6.49	
45 to below 55	C	Average	5	4.5 -5.49	Second Class
35 to below 45	P	Pass	4	3.5 -4.49	Third Class
below 35	F	Failure	0	0	Fail
Incomplete	I	Incomplete	0	0	Fail
Absent	Ab	Absent	0	0	Fail

External Examination Scheme

There shall be University examinations at the end of each semester. Each question should aim at – (1) assessment of the knowledge acquired (2) standard application of knowledge (3) application of knowledge in new situations. Different types of questions shall possess different

marks to quantify their range. Project evaluation shall be conducted at the end of sixth semester. 20% of marks are awarded through internal assessment.

Question paper type 1- Scheme of Examinations:

The external Question Paper (QP) with 80 marks and internal examination is of 20 marks. Duration of each external examination is 2.5 Hrs. The pattern of External Examination is as given below. The students can answer all the questions in Sections A& B. But there shall be Ceiling of marks in each section.

Section	Type of Question	No. of Questions	All Questions may be answered	Marks for each question	Ceiling of Marks	Total Marks
A	Short Answer Type	15	15	2	25	25
B	Paragraph/problem Type	8	8	5	35	35
C	Essay Type	4	2	10	20	20
	Total	27	25	--	80	80

Question paper type 2: Scheme of Examinations:

The external QP with 60 marks and Internal examination is of 15 marks. Duration of each external examination is 2 Hours. The pattern of External Examination is as given below. The students can answer all the questions in Sections A& B. But there shall be Ceiling of marks in each section.

Section	Type of Question	No. of Questions	All Questions may be answered	Marks for each question	Ceiling of Marks	Total marks
A	Short Answer Type	12	12	2	20	20
B	Paragraph/problem Type	7	7	5	30	30
C	Essay Type	2	1	10	10	10
	Total	21	20	--	60	60

PROJECT EVALUATION- Regular scheme only

1. Evaluation of the Project Report shall be done under Mark System.
2. The evaluation of the project will be done at two stages :
 - a) Internal Assessment (supervising teachers will assess the project and award internal Marks)
 - b) External evaluation (external examiner appointed by the University)
 - c) Grade for the project will be awarded to candidates, combining the internal and external marks.
3. The internal to external components is to be taken in the ratio 1:4. Assessment of different components may be taken as below:

Internal (20% of total)			External (80% of total)		
Component	% of Marks	Marks	Components	% of Marks	Marks
Originality	20	2	Relevance of the Topic, Statement of Objectives	20	8
Methodology	20	2	Reference, Bibliography/Presentation, quality of Analysis/ Use of Statistical Tools	20	8
Scheme/organization of the Report	30	3	Findings and recommendations	30	12
Viva –Voce	30	3	Viva-voce	30	12

Total	--	10		--	40
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4. External Examiners will be appointed by the University from the list of VI Semester Board of Examiners in consultation with the Chairperson of the Board.
5. The Chairman of the VI semester examination should form and coordinate the evaluation teams and their work.
6. Internal Assessment should be completed 2 weeks before the last working day of VI Semester.
7. Internal Assessment marks should be published in the Department.
8. The Chairman Board of Examinations, may at his discretion, on urgent requirements, make certain exception in the guidelines for the smooth conduct of the evaluation of project.

PASS CONDITIONS

- Submission of the Project Report and presence of the student for viva are compulsory for Internal evaluation. No marks shall be awarded to a candidate if she/ he fails to submit the Project Report for external evaluation.
- The student should get a minimum P Grade in aggregate of External and Internal.
- There shall be no improvement chance for the Marks obtained in the Project Report.
- In the extent of student failing to obtain a minimum of Pass Grade, the project work may be re-done and a new Internal mark may be submitted by the Parent Department. External examination may be conducted along with the subsequent batch.

PROJECT GUIDELINES

The Project work may be done either individually or as a group of students not exceeding 5 in number. The topic of the project should be on any economic issues either theoretical or case study type. Please note that Projects using primary data is desirable. The Project work should be completed by the end of the VI semester and a copy of the report (printed or typed in English) should be submitted to the Department. Length of the project report may be 30 to 35 typed pages (Paper A4, Times New Roman, Font size 12, line spacing 1.5). The report may be organized in 4 to 5 chapters. The use of simple statistical tools in data analysis may be encouraged. Project evaluation and the Viva-Voce should be conducted immediately after the completion of the regular classes /written examination. The chairman of the VI semester exam should form and coordinate the evaluation teams and their work. External Examiners will be

appointed by the University from the list of VI semester Board of Examiners in consultation with the Chairman of the Board. Presence of Student for viva-voce is compulsory for internal and external evaluation.

23. Basic contents of a Project Report

Every project report should contain an introductory chapter covering the significance of the study, objectives, methodology, chapter frame and limitation of the study. A detailed review of previous studies forms the second chapter. The third chapter may contain the profile of the study area or sampled unit. In the Fourth chapter, the analysis of the data and the final chapter should be the summary of findings and conclusion. The report should also contain a detailed bibliography and Appendices if any

CORE COURSES

Detailed Syllabi

Semester I

Course Category	Core Course 1
Course Title and Code	Microeconomics – I ECO1 B01
No. of Credits	5
No. of Contact Hours	6 Hours per week

MICROECONOMICS – I

At the end of this course students are expected to have the following course outcome,

No.	Course Outcomes	Cognitive Level
CO 1	Students explain what economics is and explain why the subject is important	Explaining
CO 2	Students explain how economists use economic models	Explaining
CO 3	Students understand the scarcity and choice in the economy and the basic problems of an economy.	Understanding
CO 4	Students explain and illustrate market equilibrium and disequilibrium.	Explaining & illustrating
CO 5	Students analyse how consumers maximize the total utility within a given income using the utility maximizing rule.	Analysing
CO 6	Students describe how consumer's utility changes when income or price change.	Describing
CO 7	Students define the term production and explain what a production function is; define and differentiate between marginal, average and total product; compute and graph marginal, average and total product.	Defining & Explaining

CO 8	Students define and differentiate between different cost concepts and interpret the relation between long run and short run costs.	Defining & differentiating
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Module I: Exploring the Subject Matter of Economics

Why study economics? Micro Versus Macro- Concepts of wealth, welfare, scarcity and growth
 -The scope and method of economics- Induction and deduction-Positive and normative economics-Value judgments- scarcity and choice- the basic problems of an economy- Production Possibility curve- basic competitive model- economic systems.

Module II: Demand and Supply Analysis

Concept of Demand- Law of Demand- Determinants of demand – Types of Demand – Demand Function – Market Demand Curve - Elasticity of Demand – Price, Income and Cross elasticity of demand –Measures of Elasticity of Demand. Demand Forecast Meaning- Factors influencing demand forecast. Concept of Supply – Law of Supply – Determinants of Supply – Supply Function – Elasticity of Supply – Market Supply Curve -Market Equilibrium.

Module III: Theory of Consumer Behaviour

Utility Analysis – Cardinal and Ordinal approaches – Law of Diminishing Marginal Utility – Law of Equi-marginal utility, indifference curve, properties of indifference curves – Price (Budget) line – Equilibrium of the Consumer with the help of indifference curves – Price, Income and Substitution effect- Derivation of individual demand curve for normal good – Decomposition of Price effect into income effect and substitution effect – Hicksian and Slutsky’s methods – Normal, inferior and Giffen goods – Application of Indifference Curves - Theory of Revealed Preference – Revealed Preference axioms - Consumer surplus - Marshall and Hicks.

Module IV: Theory of Production and Costs

Concept of Production – Production Function – Scale of production- short run versus long run production function- Law of Variable Proportions – Law of Returns to Scale – the Isoquant- Isocost Approach-producers equilibrium-expansion path- Internal and External Economies- Cobb-Douglas production function -Cost function and Cost concepts- Traditional theory of costs- Modern theory of costs.

References:

- a. Dominick Salvatore (2003): Microeconomics: Theory and Applications- 4th Edition,

Oxford University Press.

- b. Robert S Pindyck and Daniel L Rubinfeld (2009): Microeconomics- 8th Edition, Pearson India.
- c. Watson and Getz (2004): Price Theory and its Uses- 5th Edition, AITBS Publishers and Distributors.
- d. A Koutsoyiannis (1979): Modern Microeconomics- 2nd Edition, Macmillan.
5. G S Madalla and Ellen Miller (1989): Microeconomics: Theory and Applications- Tata McGraw-Hill.
6. Robert Y Awh (1976): Microeconomics: Theory and Applications- John Wiley & Sons.
7. H.R Varian (2009) , Intermediate Microeconomics- A Modern Approach., W W Norton & Co Inc; 8 edition
8. Gregory Mankiw (2006) Principles of Microeconomics,(Paperback) South Western Educational Publishing
9. Jhingan,.M.L., (2017)., Micro Economic Theory, Vrinda Publications (P) Ltd, Delh

Semester II

Course Category	Core Course 2
Course Title and Code	Macroeconomics I ECO2 B02
No. of Credits	5
No. of Contact Hours	6 Hours per week

MACROECONOMICS I

At the end of this course students are expected to have the following course outcome,

No.	Course Outcomes	Cognitive Level
CO 1	Students appreciate the context in which Macroeconomics emerged as a separate discipline.	Appreciating
CO 2	Students understand the concepts regarding macroeconomic model building.	Understanding
CO 3	Students understand and evaluate different concepts and measurements of national income	Understanding & evaluating
CO 4	Students explain how output and employment are determined in classical and Keynesian systems of economics.	Explaining
CO 5	Students explain and analyse why actual output will fall short of the productive capacity of the economy.	Explaining & Analysing
CO 6	Students evaluate fiscal policies of Governments at different situations.	Evaluating
CO 7	Students understand and generalize the concept of money and money supply in the economy and evaluate monetary policy of different Governments.	Understanding & Generalising

Module I: Introduction to Macroeconomics

Nature, scope and limitations of macroeconomics – Macroeconomic model – Types of variables: Stock and flow, endogenous and exogenous, ex-ante and ex-post – static, comparative static and dynamic – equilibrium and disequilibrium - Circular flow of income and output- national income and its measurement-Production approach, Expenditure approach, Income approach--Real and Nominal GDP.

Module II: Classical macroeconomics

Classical Economy – Say’s Law of Market – Wage-price flexibility – Classical model of output and employment – Classical theory of price level determination – Quantity theory of Money – Fisher’s Equation of Exchange – Cash Balance Approach - Neutrality of Money – Money illusion-Classical dichotomy-Classical response to the Great Depression-Crisis in the discipline of Economics.

Module III: Keynesian macroeconomics

Effective demand - Aggregate demand and aggregate supply – Consumption, Investment and Government Expenditure (C+I+G)- -Autonomous Consumption and Induced Consumption- Keynesian Consumption function-investment function-MEC and MEI- Sticky prices and wages- Assumption of fix price-Keynesian Cross model and determination of equilibrium output- Multiplier-Inflationary and Deflationary gaps-Fiscal Policy-Understanding fiscal policy using Keynesian Cross model-tax multiplier-government expenditure multiplier-balanced budget multiplier.

Module IV: Money

Nature of money-types-functions-time preference-interest rate: real and nominal-bond- relationship between bond price and interest rate-Theories of Demand for money-Liquidity Preference theory and Keynesian Liquidity Trap-Friedman’s re-statement of Quantity Theory of Money. Theories of Supply of money-Measuring supply of money-High powered money- money multiplier.

References:

1. Edward Shapiro – ‘Macro economics’ Oxford University press.
2. Gregory Mankiw – ‘Macro economics’ – 6th Edn. Tata McGraw Hill.
3. Richard T. Froyen – ‘Macro economics’, Pearson education.
4. Eugene Diulio – Macro economic Theory, Shaum’s Outline series. Tata McGraw Hill
5. Errol D’Souza – ‘Macro Economics’ – Pearson Education 2008.
6. Abhijit Kundu (2009) : Methodology and Perspectives of Social Science – Pearson Education 8
7. Dornbusch, Fischer and Startz-MacroEconomics-Tata McGraw –Hill

Additional References:

1. Lipsey R. and A Chrystal – Economics (11th Edition) Oxford University Press New Delhi.
2. Nicoli Natrass and G. Visakh Varma, ‘Macroeconomics simplified: understanding Keynesian and Classical Macroeconomic Systems’, Sage India Publications, 2014

MODEL QUESTION PAPER (CORE COURSE)

**First Semester BA Degree Examination,
November 2019 (CBCSS-UG)**

Branch: Economics

Core Course: ECO1B01- Microeconomics I

Time: 2.30 Hours

Max.:80 Marks

Section A

Short Answer Questions. Maximum marks in this section is 25. Students can attempt all questions. Each question carries a maximum of 2 marks.

1. Nature and Scope of Economics
2. Cross elasticity
3. Cobb-Douglas Production Function
4. Properties of iso-quants
5. Engel curve
6. Factors affecting price elasticity
7. Consumer surplus
8. Marginal rate of transformation
9. Price consumption curve
10. Giffen paradox
11. Law of substitution
12. Positive and normative economics
13. Explain ridge lines
14. Production possibility curve
15. Exceptions to the law of demand

Section B

Short Essay/paragraph Questions. Maximum marks in this section is 35. Students can attempt all questions. Each question carries a maximum of 5 marks.

16. Explain properties of indifference curves
17. Explain consumer equilibrium under cardinal utility theory
18. Bring out the relationship between average and marginal costs.
19. Explain the theory of equi-marginal utility
20. Explain the law of variable proportions
21. Distinguish between 'strong ordering' and 'weak ordering'.
22. Elucidate Hicksian method of measuring consumer's surplus.
23. Explain the various types of long run costs curves.

Section C

Long Essay Questions. Answer any two questions. Each question carries a maximum of 10 marks.

24. Examine the decomposition of price effect into income effect and substitution effect using Hicksian and Slutsky's methods
 25. Describe the short run and long run cost curves with suitable diagrams
 26. Explain the law of diminishing returns with the help of iso-quants.
 27. Explain the equilibrium of the consumer under revealed preference hypothesis.
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Semester III

Course Category	Core Course 3
Course Title and Code	Mathematical Methods for Economics-I EDM3 B03
No. of Credits	4
No. of Contact Hours	5 Hours per week

Mathematical Methods for Economics-I

At the end of this course students are expected to have the following course outcome,

No.	Course outcomes	Cognitive Level
CO 1	Students understand and demonstrate sound quantitative skills to collect analyse and interpret empirical data related to socio-economic issues.	Understanding & demonstrate
CO 2	Students understand the skill in statistical and mathematical techniques that are required for a meaningful study of applied economics and for carrying out empirical analysis.	understanding
CO 3	Students generalizes skills in quantitative analysis and apply it to study the concepts in most branches of economics	Generalizing & applying
CO 4	Students solve and analyse the data to solve economic issues	Solving & analysing

Module I: Introductory Concepts

Equations-Linear and nonlinear equations- Variables and parameters - Quadratic equations - solving quadratic equation -Cases where a quadratic expression cannot be factorized - The case of the perfect square - Polynomial - Relation and Function.

Module II: Graphs and Economic Applications

Concept of slope and Intercept-Equations of Straight Line-Point of intersection of two lines Graphical solution of simultaneous linear equations- Application of straight lines in Economics: Demand and supply analysis, determination of equilibrium price and quantity

Module III: Theory of Sets and basics of Integration

Kinds of sets- Operations of sets- Venn Diagrams- Cartesian Products- Laws of set operations.

Integration basics- Application in economics-such as marginal cost, marginal revenue, total cost, total revenue and consumer surplus.

Module IV: Matrices

Matrices: Meaning and types of matrices- Operation of Matrices: Addition, subtraction, multiplication (3x3)- Determinants, Properties of determinants (without proof). Rank of matrix, trace of matrix, inverse of a matrix, solution to linear equations - Cramer's rule - Inverse method.

Module V: The Derivative and Rules of Differentiation:

Limits-Continuity-The Derivative-Differentiability and Continuity-Derivative Notation- Rules of Differentiation-Higher-Order Derivatives- Implicit Differentiation- Differentials - Concept of Total and Partial Differentials - Concept of Total Derivatives- Functions of Several Variables and Partial Derivatives - Rules of Partial Differentiation- Second-Order Partial Derivatives

1. Allen,R.G.D (1974) Mathematical Analysis for Economics, McMillan Press, London. (reprint edition)
2. Chiang, A.C., Fundamental Methods of Mathematical Economics, McGraw Hill, New Delhi (recent edition).
3. JeffreyBaldaniet al.(2009),An Introduction to Mathematical Economics,Cengage Learning, Delhi.
4. C.S. Aggrawal and R.C. Joshi, Mathematics for students of economics, New Academic Publishing Co.Jalandhar.
5. Taro Yamane, Mathematics for Economist, Prentice- Hall of India.
6. .GeoffRenshaw, Maths for economics, 2 nd edition, Oxford UniversityPress.
7. Edward T. Dowling, Introduction to Mathematical Economics (3rd Edition), Schaum's Outline Series,McGRAW-HILL.
8. John Livernois,et.al., Mathematics for Economics, PHI Learning (2012)
9. Teresa Bradley, Paul Patton Essential, Mathematics for Economics and Business, 2ndEdition, Wiley India Pvt. Ltd (2006)

Semester III

Course Category	Core Course 4
Course Title and Code	Microeconomics II ECO3 B04
No. of Credits	4
No. of Contact Hours	4 Hours per week

MICROECONOMICS II

At the end of this course students are expected to have the following course outcome.

No.	Course outcomes	Cognitive Level
CO 1	Students understand the difference between the firm and industry; explain and illustrate Demand curve, Average Revenue curve and Marginal Revenue curve of a perfectly competitive firm.	Understanding & explaining
CO 2	Students understand and determine the break-even and shut down points of production for a perfectly competitive firm; understand why perfectly competitive markets are efficient.	Understanding
CO 3	Students define and analyse the characteristics of monopoly and explain the sources of barriers to entry.	Defining & analysing
CO 4	Students explain why a monopoly is inefficient using dead weight loss; differentiate between a single price monopolist and a price discriminating monopolist.	Explaining & differentiating
CO 5	Students define the characteristics of a monopolistically competitive industry and explain the difference between short run and long run equilibrium in a monopolistically competitive industry.	Defining & Explaining
CO 6	Students define characteristics of oligopolies and explain why collusion can occur in oligopolistic industries.	Defining & Explaining
CO 7	Students explain pricing and employment of factor inputs and define demand for and supply of factor inputs.	Defining & Explaining
CO 8	Students explain equilibrium in competitive factor market and factor market	Explaining

	with monopoly power.	
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Module I: Market Structure: Perfect Competition

Market-Functions-Market structure-Types of markets-Perfect competition-Characteristics-Demand AR and MR curves-Price determination in the market period- Short run equilibrium of the firm and industry- Shut down point-Long run equilibrium of the firm and industry-Constant, increasing and decreasing cost industries- Welfare effects of government intervention- Impact of a tax and subsidy.

Module II: Monopoly

Monopoly- Sources of monopoly-Types of monopoly-AR and MR curve of a monopolist - Short run and long run equilibrium- Supply curve of a monopolist- The multiplant firm- Monopoly power-Measurement of monopoly power-Social cost of monopoly- Regulation of monopoly -Price discrimination-First degree, second-degree and third degree- International price discrimination (Dumping- types)-Two part tariff, tying and bundling-Peak load pricing-Monopsony- Bilateral monopoly.

Module III: Monopolistic Competition and Oligopoly

Monopolistic competition- Features of monopolistic competition-Short run and long run equilibrium- Excess capacity-Product differentiation and selling costs-Oligopoly-Characteristics-Collusive versus non-collusive oligopoly-Cournotmodel- Kinked demand curve model - Cartel and price leadership.

Module IV: Pricing and Employment of Inputs

Competitive factor markets -Demand curve of the firm for one variable input-Demand curve of the firm for several variable inputs- Market demand curve for an input - Supply of inputs to a firm- The market supply of inputs- Equilibrium in a competitive factor market- Factor market with monopoly power- Factor market with monopsony power-Marginal Productivity theory of input demand.

References:

1. Dominick Salvatore (2003): Microeconomics: Theory and Applications- 4th Edition, Oxford University Press.
2. Robert S Pindyck and Daniel L Rubinfeld (2009): Microeconomics- 8th Edition, Pearson India.
3. Watson and Getz (2004): Price Theory and its Uses- 5th Edition, AITBS Publishers and Distributors.
4. A Koutsoyiannis (1979): Modern Microeconomics- 2nd Edition, Macmillan.

5. G S Madalla and Ellen Miller (1989): Microeconomics: Theory and Applications- Tata McGraw-Hill.

6. Robert Y Awh (1976): Microeconomics: Theory and Applications- John Wiley & Sons.

Semester IV

Course Category	Core Course 5
Course Title and Code	Mathematical Methods for Economics-II EDM4 B05
No. of Credits	4
No. of Contact Hours	4 Hours per week

Mathematical Methods for Economics-II

At the end of this course students are expected to have the following course outcome.

No.	Course Outcomes	Cognitive level
CO 1	Students understand the skill in the calculation of mathematical techniques that are required for a meaningful study of applied economics and other branches.	Understanding
CO 2	Students understand and demonstrate sound quantitative skills to collect analyse and interpret empirical data related to socio-economic issues.	Understanding and solving
CO 3	Students understand and apply the concepts Derivatives and Marginal Concepts	Understanding and applying

Module I .Uses of Derivative in Mathematics and Economics:

Marginal utility, Marginal propensity to Consume, Marginal propensity to Save, Marginal product, Marginal Cost, Marginal Revenue, Marginal Rate of Substitution, Marginal Rate of Technical Substitution. Relationship between Average Revenue and Marginal Revenue- Total cost – average cost – marginal cost – relationship between MC and AC -Marginal utility, marginal revenue and marginal cost -Elasticity Concepts-Increasing and Decreasing Functions- Concavity and Convexity-Relative Extreme-Inflection Points-Curve Sketching

Module II: Optimization:

Optimisation of single / multi variable functions - Constrained optimisation with Lagrange Multiplier – significance of Lagrange Multiplier. Economic applications: Utility Maximisation, Cost Minimisation, Profit Maximisation

Module III: Production Function, Linear Programming and Input Output analysis

Production function- homogeneous and non-homogeneous. Degree of homogeneity and returns to scale - Properties of Cobb-Douglas production function. Production possibility curve. Linear programming: – Basic concept, Nature of feasible, basic and optimal solution; Graphic solution. Input-output analysis –Matrix of technical coefficients – the Leontief matrix – computation of total demand for a two/ three sector economy.

Module IV: Market Equilibrium Market Equilibrium:

Perfect Competition- Monopoly Discriminating Monopoly

References:

1. Allen, R.G.D (1974) Mathematical Analysis for Economics, McMillan Press, London. (reprint edition)
2. Chiang, A.C., Fundamental Methods of Mathematical Economics, McGraw Hill, New Delhi (recent edition).
3. Jeffrey Baldani et al. (2009), An Introduction to Mathematical Economics, Cengage Learning, Delhi.
4. C.S. Aggrawal and R.C. Joshi, Mathematics for students of economics, New Academic Publishing Co. Jalandhar.
5. Taro Yamane, Mathematics for Economist, Prentice- Hall of India
6. Dowling E.T, Introduction to Mathematical Economics, 2nd Edition, Schaum's Outline Series, McGraw-Hill, New York, 2003 (ETD)
7. Chiang A.C. and K. Wainwright, Fundamental Methods of Mathematical Economics, Tata McGraw-Hill Education; Fourth edition (2013)
8. Henderson, J. M. and R. E. Quandt (1980), Microeconomic Theory A Mathematical Approach, McGraw Hill, New Delhi.
9. James Bradfield, Jeffrey Baldani, An Introduction to Mathematical Economics, Cengage Learning India Pvt Ltd (2008)
10. 5.A. Koutsoyiannis, Modern Microeconomics, Palgrave Macmillan; 2nd Revised edition (2003) (– see mathematical appendices for each topic)

Semester IV

Course Category	Core Course 6
Course Title and Code	Macroeconomics II ECO4 B06
No. of Credits	4
No. of Contact Hours	5 Hours per week

MACROECONOMICS – II

At the end of this course the students are expected to have the following course outcome.

No.	Course Outcome	Cognitive Level
CO 1	Students understand and derive IS-LM curves and use the framework to explain the working of an economy	Understanding & deriving
CO 2	Students explain the way fiscal and monetary policy works and apply the concept of ISLM framework.	Explaining & applying
CO 3	Students explain the concept and measurement of inflation and unemployment.	Explaining
CO 4	Students explain the trade-off between inflation and unemployment as predicted by the Phillips curve and its collapse after the stagflation of 1970s.	Explaining & predicting
CO 5	Students analyze different phases of trade cycle, and demonstrate various trade cycle theories	Analysing & demonstrating
CO 6	Students understand and analyse the reasons for economic recessions and suggest the appropriate instruments of monetary and fiscal policy.	Understanding & analysing
CO 7	Students measure the inflation in the economy and apply the concepts like WPI-CPI-PPI-GDP deflator.	Applying & calculating

Module I: ISLM Model

Goods market equilibrium using IS curve-derivation and shifts-Money market equilibrium using LM curve-derivation and shifts-equilibrium using IS and LM.

Module II: Theories of Inflation and Unemployment

Inflation–Types of Inflation –Headline and core inflation-Measurement of inflation in India- WPI-CPI-PPI-GDP deflator. Effects of inflation- Sacrifice ratio-Theories of inflation- Demand-pull versus cost-push inflation- Measures to control inflation. Unemployment – Types of unemployment- Measurement of unemployment-Cost of unemployment and Okun’s law. Phillips curve –Short Run and Long run Phillips curve – Stagflation of 1970s-reasons-NAIRU.

Module III: Short Run Analysis

Business Cycles-Phases-Theories of trade cycles- Hawtrey’s theory- Hayek’s theory- Keynesian theory-Monetarist interpretation of trade cycles-Contra-cyclical policy measures-Monetary, fiscal, and incomes policy - Meaning and Instruments.

Module IV: Fiscal and Monetary Policy

Fiscal policy-tools-effectiveness-Monetary policy-tools-effectiveness-Interaction between fiscal and monetary policy. Unconventional Monetary Policy-Quantitative easing-Transmission mechanism. Great recession of 2008 and use of monetary and fiscal policy.

References

- 1.Edward Shapiro – ‘Macro economics’ Oxford University press.
 - 2.GregoryMankiw – ‘Macro economics’ – 6th Edn. Tata McGraw Hill.
 3. Richard T. Froyen – ‘Macro economics’, Pearson education.
 4. Eugene Diulio – Macro economic Theory, Shaum’s Outline series. Tata McGraw Hill
 - 5.Errol D’Souza – ‘Macro Economics’ – Pearson Education 2008.
 - 6.AbhijitKundu (2009) : Methodology and Perspectives of Social Science – Pearson Education 8
 7. Dornbusch, Fischer and Startz-MacroEconomics-Tata McGraw –Hill
- Additional Reference
1. Lipsey R. and A Chrystal – Economics (11th Edition) Oxford University Press New Delhi.
 2. NicoliNatrass and G.VisakhVarma, ‘Macroeconomics simplified: understanding Keynesian and Classical Macroeconomic Systems’, Sage India Publications, 2014

Semester V

Course Category	Core Course 7
Course Title and Code	Fiscal Economics ECO5 B07
No. of Credits	4
No. of Contact Hours	5 Hours per week

FISCAL ECONOMICS

At the end of this course the students are expected to have the following course outcome.

No.	Course Outcome	Cognitive Level
CO 1	Students define and differentiate public finance and private finance and to generalize the concept of maximum social advantage	Defining & differentiating
CO 2	Students understand and explain the public expenditure and the effects and importance of public expenditure in India	Understanding & explaining
CO 3	Students understand the cost-benefit analysis and apply its principle in the day today economic life.	Understanding & applying
CO 4	Students understand various concepts of tax, explain the tax and non tax revenue and compare and contrast the direct tax and indirect tax and its benefits.	Understanding & explaining
CO 5	Students understand and develop the skill to calculate personal, corporate income tax and other taxes	Understanding & calculating
CO 6	Students explain the types of public debt and analyse how debt is repaid.	Explaining & analyzing
CO 7	Students describe government budget and budgeting and understand the different aspects of federal finance and local finance	Understanding & describing
CO 8	Students understand the federal finance, function of finance commissions and analyse Centre State financial relations	Understanding & analysing
CO 9	Students understand NITI Aayog and explain local finances and functions and revenues	Understanding & explaining

Module I: Meaning and scope of fiscal economics

Origin, growth, meaning and scope of public finance- Public and private finance- Principle of MSA-Public goods and private goods-mixed goods and merit goods (concepts only with examples)

Module II: Public expenditure and cost benefit analysis

Meaning and importance of public expenditure with special reference to India-Wagner's, Peacock-Wiseman Hypothesis-Canons of Public expenditure-effects of public expenditure on the economy of India-investment evaluation, project evaluation and cost benefit analysis with suitable examples.

Module III: Public revenue and Income tax calculation

Sources of Public revenue-tax and non-tax- classification of taxes-canons and principles of taxation- Ability to pay- cost of service and Benefit- impact, incidence and shifting of tax burden- effects of taxation- major taxes in India like income tax, GST- calculation of personal and corporation income tax(with suitable examples).

Module IV: Public Debt and Budget in India

Public Debt and Debt management in India- Debt redemption- Budgeting in India- importance- types- Principles- procedures of budgeting- revenue and capital budgets- zero base budgeting- performance budgeting- primary deficit- revenue and capital deficit- budget deficit- fiscal policy with reference to India- contra cyclical fiscal policy- deficit financing and black money in India.

Module V: Federal and local finance in India

Meaning and importance of federal finance - function of finance commissions- jurisdictions of finance commission – Centre, State financial relations- NITI Aayog -Local finances- functions and revenues.

Assignments and Seminars

1. Discuss recent central, state and local governments' budget.
2. Calculate income tax of an employee.
3. Prepare and calculate corporation tax of a company.
4. Visit any project in the locality and calculate cost benefit analysis.
5. Discuss about local finance and project.
6. Study about war finance.
7. Consider parallel economy of India.
8. Impact of revenue and expenditure of immigrants and emigrants on the economy of Kerala.
9. Fiscal and monetary policy of India.
10. Discuss Railway Budget.
11. Changes in the financial system of post reform in India.
12. Social Audit system
13. Computation of Net price of a commodity or service by using GST

References:

1. Earl R.Rolph, (1954) "The theory of Fiscal Economics University of California Press.
2. Musgrave and Musgrave(1989),"PublicFinance in Theory and Practice",McGraw Hill International Edition.
3. Tyagi B.P. (1992-93) "Public Finance", Jai Prakash,Nath Co.,Meerat, U.P
4. .UmaKapila(2018) "Indian Economy: Performance and Policies", by Academic Foundation
5. H. Rosen, T. Gayer. (2009) "Public Finance", 9th ed., McGraw-Hill/Irwin,
6. Datta / Sundaram, (2009) "Indian Economy",S.Chand and Co. Ltd., New Delhi.
7. Bhatia H.L(1984). "Public Finance", Vikas Publishing House Pvt.Ltd.,New Delhi
8. R.K Lekhi,Jogindersingh, (2015) "Public Finance"- Kalyani publications
9. Jha R, (1998) "Modern Public Economics", Routledge London.
10. Good sand Service Tax (GST) (2019)-Concept& Status.-Central Boardof Indirect Taxesand Customs (CBIC)India.

Semester V

Course Category	Core Course 8
Course Title and Code	Indian Economic Development ECO5 B08
No. of Credits	4
No. of Contact Hours	6 Hours per week

INDIAN ECONOMIC DEVELOPMENT

At the end of this course the students are expected to have the following course outcome.

No.	Course Outcomes	Cognitive Level
CO 1	Students explain the growth and structural changes happened in Indian economy from British period to till date.	Explaining
CO 2	Students understand the background and programmes under new economic policy.	Understanding
CO 3	Students Understand the place of Agriculture, Industry and service sector in India's economy.	Understanding
CO 4	Students describe the causes and magnitude of poverty and unemployment in India.	Describing
CO 5	Students analyse various economic issues happening around us.	Analysing
CO 6	Students understand and evaluate numerical information relating to various aspects of Indian economy and India's economic policies.	Understanding & evaluating
CO 7	Students refer books related to Indian economy, collect clippings and articles from newspapers and magazines and also follow economic survey, economic review and RBI Bulletin.	Referring & collecting
CO 8	Students explore beyond the texts, conducts field visits and report economic events from field visits.	Exploring& visiting

CO 9	Students analyse the basic characteristics of Kerala economy and evaluate the Kerala model with other economies.	Analysing & evaluating
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Report Based on Study Tour: *A study tour is recommended because it may add direct experience to learners about different economic culture of the country. All the final year students need to prepare a report of the tour that includes the places they visited, its importance etc and submit it to the Head of the Department soon after the completion of the tour.*

Module I : Development Policies And Experience(1947-1990).

Low Level of Economic Development under the Colonial Rule- Development and Structural Change of Indian Economy Since Independence: Economic policies Perused between 1950's and 1980's: Mixed Economic framework; Market intervention policy and import substitution; Objectives and strategy of planning: Failures and achievements of plans – Performance of 11th plan – Current plan.

Suggested Additional Activities

1. Find out and prepare a list of items that India used to import and export during 1950-51 and 1990-91
 - a. Observe the difference
 - b. Do you see the impact of self-reliance? Discuss. Details can be collected from latest Economic Survey.
2. Find out the Deputy Chairman and members of the first Planning Commission of India
3. Find out the commodities which India Government permitted to import till 1980.
4. Explain how import substitution can protect domestic industry?

Module II : Economic Reforms since 1991

Background for the introduction of New Economic Reforms of 1991; Liberalisation, Privatisation and Globalisation: An Appraisal- Indian Economy during Reforms with Special focus on trends in FDI, FII and Disinvestment- Centre-State Financial Relations: Finance Commission, its structure and Functioning (with emphasis on Latest Finance Commission). Role of NITI Aayog.

Suggested Additional Activities

1. Prepare arguments for and against subsidies. Explain your view.
2. Do you think only loss making companies should be privatised? Why?
3. Construct a pie chart for the sectoral contribution of GDP for the period 1950-51 and 2012-
4. What would you observe? Is there a structural change? Explain in your own words
4. Prepare a list showing the latest data on the number of banks- nationalized, private, foreign and New Generation Banks.
5. Discuss the different formulae used for Finance Commission awards.
6. Find out who all are there in the First Finance Commission of India

Module III: Gross Domestic Product and Sectors.

a. Indian Agriculture: The place of Agriculture in the National Economy; Recent Trends in Investment, Credit and Agricultural Subsidy Policy, Agricultural Marketing and Price- New Agricultural Strategy of 1960s (Green Revolution)- Food Security, PDS and TPDS in India; The Need, Scope and Appraisal of Land Reforms in a Developing Country like India.

b. Indian Industries: Review of Industrial Growth under Planning- Industrial Structure: Traditional, SSI, Village, Cottage and Modern Industries- Industrial Sickness-Industrial Policy Resolutions: 1956, 1977, 1980, 1991; an Analysis of Current Industrial Policy- Infrastructure Development in India.

Suggested Additional Activities.

1. Why, despite the implementation of green revolution, 65% of our population continued to be engaged in the agricultural sector till 1990?
2. Why was public sector given a leading role in industrial development during the plan period?
3. Losses incurred by public sector undertakings are to be met out of the public budget"-Do you agree with this statement? Discuss.
4. Find out the method of estimating inflation in India. Compare it with other countries.

Module IV: Current Challenges Facing the Indian Economy.

a. Poverty: Who are Poor?, Causes and Measurement of Poverty, Number of Poor in India; Policies and Programmes Towards Poverty Alleviation with Special Emphasis on Recent Policies like- Food as a Right: The Food Security Act of 2013 & MGNREGS.

b. Unemployment: Nature, Trends and Estimates of Unemployment in India, Informalisation of Indian Work Force; Employment Prospective of the latest Five Year Plan; Recent Schemes to Reduce Unemployment and Underemployment.

Suggested Additional Activities.

1. Find out from your parents and teachers types of tax payments they are making. Classify the taxes and observe the differences.
2. On the basis of the definition of poverty line, analyse whether categorization of people

- into BPL/APL is done in the correct way. Explain in your own words.
3. Analyse whether the dream programme of MGNREGP is carrying out in the right way. If No, suggest ways to make the programme more effective.
 4. In some communities, you might have noticed that even if the males do not earn high income, they do not send women to work. Why?
 5. Prepare a list of recent schemes and objectives to strengthen the rural areas from the government website <http://www.rural.nic.in>

Module V: Kerala's Economic Development

Growth and Structure- Primary, Secondary and Tertiary Sectors-Economic Development Vs Social Development-Poverty Profile of Kerala- Indicators of Human Development: PQLI and HDI- Demographic Transition of Kerala- Trends in Employment and Unemployment in Kerala- Sustainability of –Kerala Model of Development|| with a Special Mention on Recent Sen-Bhagawati Debate- Decentralised Planning and Development of Kerala- Land Reforms in Kerala- Migration: Concepts in Migration- Emigration to the Gulf- Remittance and its Impact on the Economy of Kerala- Return Migration: Causes, Problems and Policies.

Suggested Additional Activities.

1. Find out the history of emigration from Kerala.
2. Foreign remittance is the backbone of Kerala's socio-economic development". Discuss.
3. What is Nitaqat and Saudization? In what ways it is harmful to the economy of Kerala.
4. Find out the reasons for the existing controversy in poverty estimation.
5. Observe the functioning of „ayalkoottams“ (SHGs) in your locality and write how far it is successful in empowering women.

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1. 1.Economic development in India-Problems and Prospects,N.P.Abdul(Ed),
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3. 2.Indian Economy, Gopalji Gupta, PEARSON, NewDelhi.
4. 3.Ahulwalia, I.J. and I.M.D. Little (Eds) (1999), *India's Economic Reforms and*
5. *Development*, (Essays in honour of Manmohan Singh), Oxford University Press, New Delhi.
6. Bardhan, P .K. (1999), *The Political Economy of Development in India*, Oxford University Press, NewDelhi
7. Chakravarty S, (1987), *Development Planning: The Indian Experience*, Oxford University Press, and New Delhi

8. Acharya Shanker, Mohan Rakesh (Eds) (2011), *India's Economy: Performance and Challenges*, Oxford University Press, New Delhi
9. Uma, Kapila (2013), *Indian Economy: Performance & Policies*, Academic Foundation, New Delhi.
10. Amit Badhuri, *Development with Dignity* (2005), NBT New Delhi.
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13. Jalan, B. (1992), *The Indian Economy – Problems and Prospects*, Viking, New Delhi.
14. Joshi, V. and I.M.D. Little (1999), *India: Macro Economics and Political Economy, 1964-1991*, Oxford University Press, New Delhi.
15. Kaushik Basu (Ed) (2004), *India's Emerging Economy*, Oxford University Press, New Delhi.
16. Centre for Development Studies, 1977, *Poverty, Unemployment and Development Policy: A case study of selected issues with reference to Kerala*, Orient Longman, Bombay.
17. B.A. Pakash (Ed) 2004, *Kerala's Economic Development: Performance and Problems in the post liberalization period*, Sage Publications, New Delhi.
18. B.N. Ghosh & Patmaja D. Namboodiri, 2009 (Eds), *The Economy of Kerala Yesterday, Today and Tomorrow*, Serial Publications, New Delhi.
19. K.C. Zachariah, K.P. Kannan, S. Irudaya Rajan, 2002 (Ed). *Kerala's Gulf Connections*, C.D.S, Trivandrum.
20. Rajasenan, D. and Gerard De Groot (Ed) 2005, *Kerala Economy: Trajectories, Challenges and Implications*, CUST, Kochi.

Semester V

Course Category	Core Course 9
Course Title and Code	ECONOMIC THEORY AND DATA EDM 5 B09
No. of Credits	4
No. of Contact Hours	5 Hours per week

ECONOMIC THEORY AND DATA¹

At the end of this course the students are expected to have the following course outcome.

No.	Course outcomes	Cognitive Level
CO 1	Students understand the basic sources of economic data, the structure, the scale of measurement, data reporting and data pulling/extracting exercises, data cleaning exercises, data treatment exercises etc.	Understanding & classifying
CO 2	Students use and apply data in solving problems related to economic issues	Understanding

Module 1

Economic theory and data An introduction to the role of data in economic history - the Physiocrats - Quesnay - Hume - William Petty - Kuznets modern data sources - the structure of data -Scale of measurement- an introduction to types of data-Time series, cross-sectional, Pooled- Panel, Longitudinal, or Micro panel data- Data transformations: levels versus growth rates-Sources of data-Data reporting delay-length of data Accuracy of data

Module II

India specific data sources The role of the National Sample Survey Organization (NSSO), Central Statistical Organization (CSO), National Statistical Office (NSO), Annual Survey of Industries (ASI), Reserve Bank of India (RBI)- Handbook of Statistics on Indian Economy- SEBI Handbook of Statistics- Datasets (Employee Provident Fund Organization [EPFO], Ministry of Corporate Affairs [MCA], Database on Indian Economy, [DBIE], Census datasets- Open Government Data Platform India- National Family Health Survey (NFHS)- Data pulling/extracting exercises, data cleaning exercises, data treatment exercises - case study

Module III-

Global data sources UNData-Monthly Bulletin of Statistics (MBS),SDG Indicators, UN Comtrade database, United Nations Conference on Trade and Development (UNCTAD), World Development Indicators (WDI), IMF Databases-World Economic Outlook Databases, Climate Change Indicators Dashboard, International Financial Statistics , Financial Access Survey, Government Finance Statistics- The World Bank Data Catalog-The Global Findex Data Base- Federal Reserve Economic Database (FRED)- data pulling/extracting exercises, data cleaning exercises, data treatment exercises - case study

Module IV-

Case Studies and controversies The minimum wage controversy - the backward bending supply curve for labor - GDP calculations - inflation calculations - purchasing power parity calculations - Reinhart/Rogoff controversy- Public data manipulation-Greece's public deficit figures, controversies about Argentina's inflation statistics, the Brazilian "fiscal pedaling-limitations of publicly available data (case studies of relevant economies)

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Wayne Winston, Data Analysis and Business Modelling (2016 Edition)

Koop Gary, Analysis of Economic Data,John Wiley and Sons Ltd (3 rd edition)

Charles D. Kirkpatrick, Time the Markets, FT Press (2011 Edition)

Damodar N Gujarati, Dawn C Porter and Sangeetha Gunasekar, Basic Econometrics, McGraw Hill Education (5th Edition)

<http://data.un.org/> <http://rchiips.org/nfhs/>

<https://data.gov.in/>

<https://datacatalog.worldbank.org/home>

<https://www.ers.usda.gov/data-products/international-macroeconomic-data-set.aspx>

<https://www.imf.org/en/Data#data>

Note: Under internal evaluation, assignment should be based on data pulling/extracting exercises, data cleaning exercises, data treatment exercises using relevant databases mentioned in the syllabus.

Semester V

Course Category	Core course 10
Course Title and Code	Basic Econometrics EDM5 B10
No. of Credits	4
No. of Contact Hours	6 Hours per week

BASIC ECONOMETRICS

At the end of this course the students are expected to have the following course outcome.

No.	Course Outcomes	Cognitive Level
CO 1	Students define econometrics and understand the basic econometric techniques and their applications.	Defining & Understanding
CO 2	Students analyse empirical work in economics and use actual economic data to test economic theories.	Analysing
CO 3	Students understand and analyse statistical concepts of hypothesis testing, estimation and diagnostic testing of simple and multiple regression models etc	Understanding & analysing
CO 4	Students with foundation in econometric analysis, develop skills required for empirical research in economics	Analysing
CO 5	Students analyze and solve simple Linear Regression Model and theories related to it	Analysing & solving
CO 6	Students analyze two variable regression models and multiple regression models and apply these theories for the empirical analysis of data available to them	Analysing & applying
CO 7	Students analyse and solve Econometric Problems like Multicollinearity and Heteroskedasticity	Analysing & solving
CO 8	Students develop an attitude for conducting empirical works in economics and they appreciate the econometric works.	Conducting research

Module I: Review of probability and statistics

Univariate case & bivariate case- Random Variables and Probability distributions- Expectation and moments- Review of statistical inference- Sampling distributions and inference-The Central Limit theorem (Asymptotic distribution of the sample mean), Confidence intervals, testing of hypotheses

Module II: Introduction to Econometrics

Econometrics: Meaning, Scope and Limitations – Methodology of Econometrics –Statistical versus deterministic relationships – Regression versus Causation – Regression versus Correlation – Terminologies – Types of data.

Module III: – The Linear Regression Model:

Simple and Multiple Meaning of Linearity –PRF and Stochastic Specification – Significance of disturbance term – SRF – Estimation: The Method of Ordinary Least Squares – Meaning and Derivation of estimators – Assumptions of OLS – Variances and Standard Errors of Estimates – Gauss Markov Theorem without proof (BLUE) – Measure of Goodness of fit- r^2 -Numerical Example of Estimation of coefficients and r^2 – Steps of Hypothesis Testing (only t test) – Multiple linear regression model (3 variable):Notations and assumptions– meaning of partial regression coefficients – Adjusted R^2 .

Module IV-Violations of Classical Assumptions:

Detection and Remedial Measures Multicollinearity: consequences, detection and remedial measures- Heteroscedasticity: consequences, detection (Park test, Glejser Test, Goldfeld-Quandt test, White's Test) and remedial measures -Generalized Least Square Method. Autocorrelation: Consequences, detection (Runs Test, Durbin Watson test) and remedial measures-Feasible GLS and First difference method.

References

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3. Damodhar. N. Gujarati and Sangeetha (2007), Basic Econometrics, Tata McGraw Hill.
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5. J.M Wooldridge (2014), Introductory Econometrics: A Modern Approach, South- Western.
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12. Maddala, G. (1992), Introduction to Econometrics, 2nd ed., MacMillan, New York.

Semester VI

Course Category	Core Course 11
Course Title and Code	Applied Econometrics EDM6 B11
No. of Credits	4
No. of Contact Hours	5 Hours per week

APPLIED ECONOMETRICS

At the end of this course the students are expected to have the following course outcome.

No.	Course Outcomes	Cognitive Level
CO 1	Students define econometrics and understand the basic econometric techniques and their applications	Defining & Understanding
CO 2	Students analyse empirical work in economics and develop regression models to solve economic problems empirically	Analysing and applying

Module 1- Simultaneous Equation Models

Simultaneous Equation Models- Consequences of Simultaneity bias -Hausman Specification test of Endogeneity - Structural and Reduced forms of equations - Identification Problem and Conditions - Single Equation Methods - Indirect Least Square Method - Two Stage Least Square Method

Module 2-Regression Models with Independent Dummy Variable

Nature, Estimation and interpretation of Dummy Variable regression- ANOVA Model Dummy Variable Trap – ANCOVA Model- Depersonalisation– Interaction Effects Using Dummy Variable-Use of dummy variables in structural change and seasonal analysis-Chow Test

Module 3-Dynamic Econometric Models

Distributed Lag Models: Nature of lagged phenomena, Estimation using Koyck transformation-The Adaptive Expectations and Partial Adjustment Models, Estimation of Autoregressive Models- Instrumental Variable Estimation-Omitted variables in a simple regression model -Measurement errors

Module 4- Introduction to time series

Nature of time series data- Stochastic Processes-Stationarity processes- non-stationarity processes- Purely random processes and random walk, unit root, testing for unit root, introduction to cointegration, Engle Granger method and error correction model

References

1. Hamilton, J. D., Time Series Analysis, Princeton University Press, 1994
2. Enders, W., Applied Econometric Time Series, second edition, John Wiley and Sons, 2006
3. Wooldridge, J. M., Econometric Analysis of Cross Section and Panel Data, MIT Press, 2001
4. Greene, W.H. Econometric Analysis, fifth edition, Pearson Education Inc., 2003

5. Damodar N Gujarati and Dawn C Porter (2009): Basic Econometrics, Fifth edition, McGraw Hill International Edition.
6. Walter Enders (2006). Applied Econometric Time Series, Second edition, John Wiley and Sons.
7. James H Stock and Mark W Watson (2008): Introduction to Econometrics, Pearson, Addison Wesley.
8. Christopher Dougherty (2007): Introduction to Econometrics, Third edition, Oxford University Press.
9. G S Maddala (2002): Introduction to Econometrics, Third Edition, John Wiley and Sons.

Semester VI

Course Category	Core Course 12
Course Title and Code	International Economics ECO6 B12
No. of Credits	4
No. of Contact Hours	5 Hours per week

INTERNATIONAL ECONOMICS

At the end of this course the students are expected to have the following course outcome.

No.	Course Outcomes	Cognitive Level
CO 1	Students identify the basic difference between inter-regional and international trade and understand how international trade has helped countries to acquire goods at cheaper cost, and explain it through the various international trade theories..	Identifying, explaining and analysing
CO 2	Students evaluate how international trade promotes economic development. Students compare and contrast different trade theories.	Evaluating
CO 3	Students understand the ways in which free trade and restrictive trade policies could be practiced	Understanding
CO 4	Students identify the issues and prospects of current international trade order with respect to India and its major trade partners	Identifying
CO 5	Students understand the functioning of foreign exchange markets in the world	Understanding
CO 6	Students relate different exchange rate systems with the current systems of foreign exchange determination across the globe	Relating
CO 7	Students calculate the Balance of payments (BOPs) of nations and analyse different instruments to clear BOP disequilibrium	Calculating & analysing
CO 8	The students are expected to acquire skill that will help them to take rational decisions in issues related to international	Developing skill

	economics.	
CO 9	Students understand the role of international agencies in promoting world trade and economic cooperation.	Understanding

Module I: Introduction to International Economics

Subject matter and importance of International Economics - Internal trade and International trade - Importance of International trade – International trade and economic development – Basic /*concepts- Terms of trade.

Module II : Theories of International Trade:

Mercantilist approach to trade –Classical Theory: Absolute and Comparative Cost Advantage theories - Hecksher – Ohlin Theory and Leontief Paradox.

Module III: Theory of Commercial Policy:

Free trade - Arguments for and against free trade – Protection - Arguments for and against protection - Methods of Trade Restriction : Tariff and non-tariff trade barriers - Types of tariffs – New protectionism - export subsidy and countervailing duties - Dumping and anti-dumping duties – Economic Integration – WTO, EU, NAFTA, ASEAN, SAARC.

Module IV: Foreign Exchange

Foreign exchange market – functions - Defining foreign exchange and exchange rate – Exchange rate concepts – exchange rate changes (devaluation, revaluation, depreciation, appreciation- over valuation and undervaluation) – Different systems of exchange rate determination - fixed and flexible exchange rate – Hybrid exchange rate systems – Managed floating – Theories of exchange rate – Mint Parity theory – Purchasing Power Parity Theory – Balance of Payments Theory - Components of Foreign exchange .

Module V: Balance of Payments

Defining Balance of Trade and Balance of Payments - Structure of balance of payments –

Equilibrium and disequilibrium in BOP – Measures to correct BOP disequilibrium – India's BOP since 1991 – International financial flows – Foreign Direct Investment and Portfolio Investment – Currency Convertibility – IMF-Role and Functions.

References

1. Salvatore, Dominick, International Economics, Wiley India, NewDelhi.
2. C.P. Kindle Berger, International Economics
3. Bo Soderstein and Geoffrey Reed, International Economics, Macmillan
4. Carbaugh, International Economics, CengageLearning
4. Francis Cherumilam - International Economics
5. Mannur, H.G. International Economics
6. Errol D'Souza, Macro Economics, Pearson Education 2008 (For BOP in India)
7. RBI Bulletin, Various issues

Semester VI

Course Category	Core Course 13
Course Title and Code	Applied Financial Economics EDM6 B13
No. of Credits	4
No. of Contact Hours	5 Hours per week

APPLIED FINANCIAL ECONOMICS

At the end of this course the students are expected to have the following course outcome.

No.	Course Outcomes	Cognitive Level
CO 1	Students understand the basic concepts in financial economics and the role of finance in the operation of an economy.	Understand
CO 2	Students understand and analyse different investment theories and the structure of interest rate in the formulation of a project.	Understand & analyse
CO 3	Students understand the fundamentals of valuation of bonds and securities.	Understand & analyse
CO 4	Students understand risk and return and analyse various types of risks. They evaluate the measurement of risk and return of an asset, measurement of risk and return of a portfolio.	Understand & analyse
CO 5	Students analyse cost of capital and capital asset pricing model	Analyse
CO 6	Students explain derivatives and differentiate different derivatives like forward, future, options and swaps	Explain & differentiate
CO 7	Students analyse the derivative market and evaluate different derivatives for investment.	Analyse & evaluate
CO 8	Students watch the conditions of financial markets and analyse its impact in the economy	Watch media

Module-I Introduction to Financial Economics

What is Money, what is Finance, Difference between stock and flow (income, wealth, black money, investment) Monetary assets vs financial assets, Financial System-meaning and functions- Components of Financial System: Financial institutions, Financial Markets, Financial Instruments, Financial services Interface of Financial Management with Other Functional Areas

Module- II-Financial statements and ratios

Time value of money-Present value and discounting- Basic Financial statement Analysis Income Statement Balance Sheet Analysis; P&L Account, Ratio Analysis-Liquidity, Leverage; Turnover and Profitability ratios, Flows and Annuity; Present Value-Single Cash flow, Multiple Cash Flows and Annuity; Growing Annuity, Perpetuity and Growing Perpetuity; Loan Amortization-Financial ratios -liquidity, activity, debt, market ratios, Profitability ratios, financial efficiency ratios- Break- even analysis

Module III Capital budgeting and planning

Capital Budgeting Techniques and Compound Interest Problems Introduction to financial statement, assessing financial performance, net present value, internal rate of return, payback period; Benefit cost ratio- Cost of capital- Capital rationing and profitability index-projects with different lives; money and time weighed rate of return; fixed interest securities, uncertain income securities, equities, valuing a loan with allowance for capital gains and indexation.

Module IV- Risk and Return Concepts;

Relationship Between Risk and Return; Risk Diversification; Systemic and Unsystemic risk; Measuring the Risk-Variance and Standard Deviation

Module: V-Derivatives

Derivatives Definition, evolution and benefits of derivatives- Types of Derivatives: Forward Futures Options and Swaps-Participants in the derivative markets-Limitations of derivatives.

Note to faculty / examiner • The paper aims to impart students' applied knowledge about financial market instruments and services. Hence, topics mentioned in the syllabus, especially in modules 2 and 3 should be taught in problem-solving mode using relevant data. Examiners should prepare question papers in accordance with the above objective

References

1. Sloman, J and Jones,E (2017)Essential Economics for Business (5th Edition)
2. Drake P.P and Fabozzi, F.J (2010). The Basics of Finance: An Introduction to Financial Markets,

- Business Finance, and Portfolio Management (Frank J. Fabozzi Series), John Wiley & Sons.
3. Ross, S.M., An Introduction to Mathematical Finance, Cambridge University Press, Norton, London, 1999
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 10. Guru Swamy, S (2009): Financial Markets and Institutions, 3rd ed, Vijay Nicole Imprints Pvt Ltd, Chennai, TATA Mc Graw Hills Co Ltd, New Delhi.
 11. Faboozi, J Frank, Modigliani Franco (2008):Capital Markets-Institution and Instruments, 4th ed, Pearson Education, New Delhi (PHI).
 12. Gordan K. Natarajan , Financial Markets and Services, Himalaya Publishing House, Mumbai

Semester VI

Course Category	Core Course 14
Course Title and Code	Economics of Growth and Development ECO6 B14
No. of Credits	4
No. of Contact Hours	5 Hours per week

ECONOMICS OF GROWTH AND DEVELOPMENT

At the end of this course the students are expected to have the following course outcome.

No.	Course Outcomes	Cognitive Level
CO 1	Students understand the theoretical framework for growth and development discourses under different schools of economic thoughts and develop better insights and knowledge on issues and challenges on economic development.	Understanding
CO 2	Students analyze the factors affecting the long run economic growth, both from a positive and negative sense.	Analysing
CO 3	Students understand various theories of growth and development and analyze the problems of the developing world.	Understanding & analysing
CO 4	Students differentiate growth and development and measures growth and development by using different techniques like HDI, HPI etc.	Differentiating
CO 5	Students develop attitudes towards the problems of underdevelopment and evaluate different policies and theories to overcome the issues of underdevelopment.	Evaluating
CO 6	Students analyse and evaluate Neoclassical growth models.	Analysing & evaluating
CO 7	Students identify the problems of poverty and inequality and analyse the measures and	Identifying & analysing
CO 8	Students internalize the concept of Sustainable development, identify various environmental issues and appreciate the values of sustainable development.	Identify & internalizing

Module I: Development and Underdevelopment- An Overview

Background and beginning of 'Development Economics' in the post-world war era, its elements
Defining economic development - Alternative measures of development –PQLI, HDI and its extensions, Development and growth- income as a measure of growth - Human development- Sens capability approach, development as freedom, Structural features of underdeveloped economies-International variations – development gap- Underdevelopment as a low level equilibrium in a multiple equilibrium situation – low level equilibrium trap

Module II: Perceptions about Development and Underdevelopment

Vicious circle of poverty- Rostow's stages of growth-big push, balanced and unbalanced growth, Low level equilibrium models, Critical Minimum effort thesis- Dual economy models- Lewis model and its extensions, Harris- Todaro migration model - Poverty and Inequality: Definitions, Measures and Mechanisms - Concept of poverty and its measures - Inequality meaning – axioms - commonly used inequality measures, Kuznets curve - Impact of poverty and inequality on process of development.

Module III: Facts about economic growth

Neoclassical growth model- Solow model of growth- Production function, investment function, capital accumulation and steady state. Dynamics of the model-change in saving rate, population growth, Technological progress. Convergence in the Solow model. Endogenous growth theory- AK model.

Module IV: Development and environment.

Sustainable development. The environmental Kuznets curve. Global warming.Limits to growth- Earth summit.

References:

- 1) Charles I Jones & Dietrich Vollreth (2013) – Introduction to economic growth, 3rd edition. W W Norton & Co
- 2) David N Weil (2012) – Economic growth, 3rd edition , Pearson.

- 3) A P Thirlwall (2011) – Economics of Development, 9th edition, Palgrave.
- 4) Todaro & Smith (2017) – Economic Development, 12th edition. Pearson.
- 5) Subrata Ghatak (2003) – Introduction to development economics, 4th edition, Routledge.
- 6) Debraj Ray (1999) – Development economics, 1st edition, OUP.
- 7) Hendrik Van Den Berg (2016) - Economic growth and development, 3rd edition. World scientific publishing Co.
- 8) .E Wayne Nafziger (2005) – Economic Development, 4th edition, Cambridge University Press.

Semester VI

Course Category	Core Course 15/Project
Course Title and Code	Project work ECO6 B15
No. of Credits	2
No. of Contact Hours	2 Hours per week

Project

At the end of this course the students are expected to have the following course outcome.

No.	Course Outcomes	Cognitive Level
CO 1	Students understand the importance of research methodology and its basic tools for understanding the social reality	Understanding
CO 2	Students understand different types of research and familiarize the student with the quantitative and qualitative strategies of research in social science.	Understanding
CO 3	Students understand the importance of literature review in the projects and review various journals and research papers for their projects.	Understanding & reviewing
CO 4	Students analyse various research design and methods	Analysing
CO 5	Students understand the methods of collecting data and analyse hypothesis.	Understanding
CO 6	Students report projects in a systematic way.	Reporting
CO 7	After completing this course the students prepare research projects and work with a research problem..	Conducting research

Note: Encourage the use of database and ‘*appropriate*’ statistical/mathematical/econometric methods learned in previous semesters for project work

Semester VI

Elective Courses

Course Category	Elective Course
Course Title and Code	Research Methodology EDM6 B16
No. of Credits	3
No. of Contact Hours	3 Hours per week

RESEARCH METHODOLOGY

At the end of this course the students are expected to have the following course outcome.

No.	Course Outcomes	Cognitive Level
CO 1	Students understand the importance of research methodology and its basic tools for understanding the social reality	Understanding
CO 2	Students understand different types of research and familiarize the student with the quantitative and qualitative strategies of research in social science.	Understanding
CO 3	Students understand the importance of literature review in the projects and review various journals and research papers for their projects.	Understanding & reviewing
CO 4	Students analyse various research design and methods	Analysing
CO 5	Students understand the methods of collecting data and analyse hypothesis.	Understanding
CO 6	Students report projects in a systematic way.	Reporting
CO 7	After completing this course the students prepare research projects and work with a research problem..	Conducting research

Module I:

Meaning and types of research - Research methods vs Methodology. Types of research – Descriptive vs. Analytical, Applied vs. Fundamental, Quantitative vs. Qualitative, Conceptual vs. Empirical.

Module II:

Research Formulation – Defining and formulating the research problem - Selecting the problem - Importance of literature review in defining a problem – Literature review – Primary and secondary sources – Identifying research gap - Development of working hypothesis.

Module III:

Research design and methods – Research design – Basic Principles- Need of research design — Features of good design – Important concepts relating to research design – Development of Models. Developing a research plan

Module IV:

Data Collection and analysis: Execution of the research - Observation and Collection of data - Methods of data collection – Sampling Methods- Data Processing and Analysis strategies - Data Analysis with Statistical Packages - Hypothesis-testing - Generalization and Interpretation.

Module V:

Reporting and report writing – Structure and components of scientific reports - Different steps in the preparation – Layout, structure and Language of typical reports – Illustrations and tables - Bibliography, referencing and footnotes.

References

1. Garg, B.L., Karadia, R., Agarwal, F. and Agarwal, U.K., 2002. An introduction to Research Methodology, RBSA Publishers.
2. Kothari, C.R., 1990. Research Methodology: Methods and Techniques. New Age International. 418p.
3. Sinha, S.C. and Dhiman, A.K., 2002. Research Methodology, EssEss Publications.2 volumes.
4. Trochim, W.M.K., 2005. Research Methods: the concise knowledge base, Atomic Dog Publishing. 270p.
5. Wadehra, B.L. 2000. Law relating to patents, trade marks, copyright designs and geographical indications.Universal Law Publishing.
6. . Anthony, M., Graziano, A.M. and Raulin, M.L., 2009. Research Methods: A Process of Inquiry, Allyn and Bacon.
7. Coley, S.M. and Scheinberg, C. A., 1990, "Proposal Writing", Sage Publications.
8. Day, R.A., 1992.How to Write and Publish a Scientific Paper, Cambridge University Press.
9. Fink, A., 2009. Conducting Research Literature Reviews: From the Internet to Paper. Sage Publications

Semester VI

Course Category	Elective Course
Course Title and Code	Behavioural Economics ECO6 B17
No. of Credits	3
No. of Contact Hours	3 Hours per week

BEHAVIOURAL ECONOMICS

At the end of this course the students are expected to have the following course outcome.

No.	Course outcomes	Cognitive Level
CO 1	Students understand the economic decision making process and role of psychology	Understanding
CO 2	Evaluate the importance of psychology in behavioural economics	Evaluating
CO 3	Understand the role of choice in theoretical formulations	Understanding
CO 4	Critically discuss the behavioural concepts in real situations and game theory	Discussing and analysing

Tagging Course Outcomes

CO	CO Statement	PSO	Cognitive Level	Knowledge Category	Assessment
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CO 1	Familiarise the economic decision making process	PSO 1	Understand	Conceptual	Understand the basic themes associated with behavioural economics & decision making
CO 2	Evaluate the importance of psychology in behavioural economics	PSO 2	Understand	Conceptual	Identify the link and mutual interaction between psychology and behavioural economics
CO 3	Understand the role of choice in theoretical formulations	PSO 3	Evaluate	Conceptual	Demonstrate how various choices define behavioural concepts
CO 4	Critically discuss the behavioural concepts in real situations and game theory	PSO 4	Understand	Conceptual	Assess and familiarise the real world situations in connection with behavioural economics

Module I:

Introduction to Behavioral Economics Origins of Behavioral Economics, Decision-making under Neo- classical economic framework- rationality, optimization Role of Intuition, Emotions, Beliefs in decision making Bounded Rationality Judgment under Risk & Uncertainty : Heuristics & Biases Heuristics : Representativeness, Substitution, Availability, Affect, Anchoring, framing Biases: Cognitive and emotional biases

Module II:

Choice Under Risk & Uncertainty Expected Utility Prospect Theory – Reference Points – Risk Concept and Understanding – Loss Aversion – Shape of Utility Function – Decision Weighting – Probabilistic Judgment. Mental Accounting Framing Mental Accounts Fungibility & Labels Hedonic Editing

Module III:

Inter-temporal Choice, Temporal Choice, Construal Level Theory, Valuation of Delayed Consumption Preferences for Sequences of Outcomes, Hyperbolic Discounting, Preference Reversal

Module IV:

Behavioral Game Theory Social preferences: Fairness, trust, cooperation, reciprocity, Norms Limited Strategic Thinking Choice architecture: Nudge, Nudge vs. boost, Behavioral public policy

References

1. Erik Angner, "A Course in Behavioral Economics", Palgrave Macmillan
2. M. Altman, Handbook of Contemporary Behavioural Economics: Foundation and Developments (2007), Prentice Hall India
3. E. Cartwright, Behavioural Economics (2011), Routledge
4. D. Kahneman, Thinking Fast and Slow (2011), Allen Lane, Penguin Books
5. G. Loewenstein, Exotic Preferences: Behavioural Economics and Human Motivation (2007), Oxford University Press
6. Sanjit Dhami, "The Foundations of Behavioral Economic Analysis", Oxford University Press (2016)
7. Behavioral Economics: Toward a New Economics by Integration with Traditional Economics by Ogaki, Masao, Tanaka, Saori C. Published by Springer, ISBN 978-981-10-6439-5
8. Nick Wilkinson; Matthias Klaes (2012), An Introduction to Behavioral Economics, 2nd Edition, Palgrave Macmillan.
9. World Development Report 2015: Mind, Society, and Behavior

Semester VI

Course Category	Elective Course
Course Title and Code	Urban Economics ECO6 B18
No. of Credits	3
No. of Contact Hours	3 Hours per week

URBAN ECONOMICS

At the end of this course the students are expected to have the following course outcome.

No.	Course outcomes	Cognitive Level
CO 1	Students understand the fundamental terminologies of urban economics	Understanding
CO 2	Students Identify the problems associated with urbanisation	Identifying
CO 3	Understand the theories and analytical tools in urban economics	Understanding
CO 4	Evaluate the policy initiatives developed in urban India	Evaluating

Tagging Course Outcomes

CO	CO Statement	PSO	Cognitive Level	Knowledge Category	Assessment
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CO 1	Understand the fundamental terminologies of urban economics	PSO 1	Understand	Conceptual	Evaluate the conceptual understanding of urban economics
CO 2	Identification of problems associated with urbanisation	PSO 2	Understand	Conceptual	Understand the challenges associated with urbanisation
CO 3	Understand the theories and analytical tools in urban economics	PSO 3	Understand	Conceptual	Test the theoretical and analytical knowledge of students in urban economics
CO 4	Recognise the policy initiatives developed in urban India	PSO 4	Understand	Conceptual	Assess the understanding of urban policies and programmes implemented in India

Module I:

Definition and Scope of Urban Economics -The Process of Urbanization-Definition of Urban Area-causes of urbanization- Models of Urban Development and Planning- The Urban Economy and Development Strategy - The Economics of Urban Growth - Models of Urban Growth - The Frontiers of Urban Growth -The Economics of Intra-urban Location Decisions- Residential and industrial locations- Semi urban areas- special townships-Features of Urbanization in Developing Countries.

Module II:

Urban local Government- Types of local bodies and Governance- Cantonment Boards- Special Areas Improvement Trust: Functions, Problems and limitations- Slums Areas: Locations and Problems - slum development policy- Urban Poverty: Problems, Measures, and Policies- the Nature of Urban Poverty -The Causes of Poverty- Urban Crime and management

Module III:

Urban labour markets –Developed and developing economies –Informal sector –Segmentation and hierarchy –Dualism –Impact of globalization. – Urbanization without labour absorption in India.

Module IV:

Urbanization in India –Growth of Urban Population- Urban Development Policy in India- Policies and Programmes under the Plans-Jawaharlal Nehru National Urban Renewal Mission (JNNURM).

References

1. O'Sullivan, A. (2002) Urban Economics, McGraw-Hill Irwin.
2. FredDurr, The Urban Economy (London, Index Educational Publishers) 1971.
3. Todaro Michael P Internal Migration in Developing Countries a review of Theory evidence methodology & research priorities, ILO Geneva
4. Shukla, V. (1996) Urbanization and Economic Growth, Himalaya Publishers
5. Bidyut Mohanty (1993) Urbanization in Developing Countries Basic Services and Community Participation, Institute of Social Science, Concept Publishing House
6. Briance A and Ravinder Singh, (edited) (1995) Housing the Urban Poor, Policy and Practice in Developing Countries, Sage Publications (New Delhi).
8. Hartwick, John M. (2015) Urban Economics, Routledge; 1st edition.
9. Button, K. J. (1976) Urban Economics Theory and Policy, Palgrave Macmillan UK.
10. Rakesh A Mohan (1978) Urban Economic and Planning Models Assessing the Potential for Cities in Developing Countries, OCP- 25, World Bank.
11. Duranton, G. (2007). Urban Evolutions: The Fast, the Slow, and the Still. American Economic Review, 97 (1), 197-221. <http://dx.doi.org/10.1257/aer.97.1.197>.
12. Black, Duncan and Henderson, Vernon (1999), A Theory of Urban Growth, Journal of Political Economy, 1999, vol. 107, no. 2, The University of Chicago.
13. Handbook of Urban Statistics 2019 ,Ministry of Housing and Urban Affairs, Government of India

OPEN COURSES

(For Non-Economics Students)

Semester V

Course Category	Open Course
Course Title and Code	Economics in Everyday Life ECO5 D01
No. of Credits	3
No. of Contact Hours	3 Hours per week

ECONOMICS IN EVERYDAY LIFE

At the end of this course the students are expected to have the following course outcome.

No.	Course outcomes	Cognitive Level
CO 1	Non economic students understand the basic concepts in economics and recognize the importance of economic science in their everyday life.	Understanding
CO 2	Students understand and explain basic concepts from micro and macro economics	Explaining
CO 3	Students develop interest to understand the working of an economy.	Understanding and developing interest
CO 4	Students understand and evaluate the working of budgetary system in an economy	Understanding and evaluating

Module I: Basic Concepts and the Methods of Economics

What is economics- Definitions of economics- Basic problems of an economy- how the basic problems are solved by different economic systems – Microeconomics and Macroeconomics

Module II: Microeconomic Concepts

Demand –demand function, demand schedule, demand curve. Supply –supply function, supply curve- market equilibrium. Elasticity: price, income, cross - Determinants of elasticity. Competition Vs. Monopoly. Multinational Corporations. Cartels – Mergers – Acquisitions

Module III: Macro Economic Concepts

National income - GNP, GDP, Per Capita income. Fiscal and monetary policies: meaning and instruments, bank rate, repo rates, reverse repo rate. (concepts only. Inflation – meaning, types and effects. Budget - Revenue Expenditure and capital expenditure – Deficit: Revenue Deficit, Fiscal Deficit. Balance of trade and balance of payments - Current account and capital account.FDI and FPI.

References

1. Dominick Salvatore : Microeconomics : Theory and Applications’,:Oxford University press, Newdelhi
2. Gregory Mankiw, :Macro economics’ – 6th Edn. Tata McGraw Hill. 3. Errol D’Souza – Macro Economics’ – Pearson Education 2008.
3. B. Alvin Prakash, :The Indian Economy Since 1991: Economic Reforms and Performance’, Pearson Education India
4. SubratoGhatak _Introduction to Development Economics’ - Routledge
5. Lekhy -Public Finance and Public Economics – Kalyanipublications
6. Indian Economy Since Independence 24/ed , Kapila U, Academic Foundation, NewDelhi
Oxford Dictionary ofEconomics
7. The Penguin Dictionary ofEconomics
8. The New Palgrave Dictionary of Economics_
(<http://www.dictionaryofeconomics.com/dictionary>)

Semester V

Course Category	Open Course
Course Title and Code	Indian Financial System ECO5 D02
No. of Credits	3
No. of Contact Hours	3 Hours per week

INDIAN FINANCIAL SYSTEM

At the end of this course the students are expected to have the following course outcome.

No.	Course outcomes	Cognitive Level
CO 1	Non economic students understand the conceptual framework of Indian financial Institutions and markets and their operations.	Understanding
CO 2	Students understand the components of financial system and explain how these elements are associated with everyday life	Understanding and & explaining
CO 3	Students develop interest to understand more about Indian financial system and markets	Understanding and developing interest
CO 4	Students explain and evaluate the role of RBI in controlling financial system	explaining and evaluating
CO 5	Students develop interest toward the financial market operations	Internalizing

Module I: Basics of Indian Financial system

Meaning, Functions, Structure, Components – Financial Assets, Financial Institutions, Financial Markets, Financial Services

Module II: Banking Institutions

Commercial Banks – Meaning, Definition, Classification, Role and Functions, Investment

Norms

Module III: Regulatory Institutions

Reserve Bank of India – Objectives, Functions & Monetary Policy – Credit Control Methods- Securities Exchange Board of India – Objectives, Functions & Powers

Module IV: Non-Banking Financial institutions

Meaning, Functions of IFCI, SFCs, IDBI, EXIM Bank, Mutual Funds, Payment Banks .

Module V: Financial Markets

a) Money Market – Meaning & Functions. b) Capital Market – Meaning, Types – Primary Market, Secondary Market c) Stock Exchange – Meaning, Features, Functions, Regulatory Framework – NSE, BSE, OTCEI, Meaning of important terms - online trading, stock brokers, insider trading, speculation, short selling in trade.

References

1. Vasantha Desai: The Indian Financial System, HPH
2. G. Ramesh Babu; Indian Financial System. HPH
3. Dr. BharatishRao, B.R. Bharghavi – Indian Financial System, VBH
4. Meir Kohn: Financial Institutions and Markets, Tata McGraw Hill
5. Dr. Alice Mani: Indian Financial System, SBH.
6. L M Bhole: Financial Institutions and Markets, Tata McGraw Hill

Semester V

Open Course

BASIC ECONOMETRICS

Course Category	Open Course
Course Title and Code	BASIC ECONOMETRICS EDM5 D03
No. of Credits	3

No. of Contact Hours	3 Hours per week
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At the end of this course the students are expected to have the following course outcome.

No.	Course Outcomes	Cognitive Level
CO 1	Students define econometrics and understand the basic econometric techniques and their applications.	Defining & Understanding
CO 2	Students analyse empirical work in economics and use actual economic data to test economic theories.	Analysing
CO 3	Students understand and analyse statistical concepts of hypothesis testing, estimation and diagnostic testing of simple and multiple regression models etc	Understanding & analysing

Module I: Nature and Scope of Econometrics

Econometrics, economic theory and mathematical economics- Methodology of econometrics- Desirable properties of an Econometric model – Limitations of Econometrics.

Module II: Simple Linear Regression Model

The concept of PRF -Significance of stochastic error term-The SRF-Problem of estimation-Method of ordinary least squares-Assumptions underlying the method of least squares-Properties of estimators- Gauss Markov theorem- Coefficient of determination, r^2 -Normality assumption-Hypothesis testing- t and F tests. P value. Practical versus statistical significance.

Module III: Multiple Regression Analysis

The three variable model-OLS estimation of partial regression coefficients-Multiple coefficient of determination R^2 and adjusted R^2 -Hypothesis testing- Testing the overall significance of the regression model- F test-Testing the equality of two regression coefficients-Restricted least squares. Dummy variables and their uses.

References

- 1: Damodar N Gujarati and Dawn C Porter(2009)- Basic Econometrics, Fifth edition,McGraw Hill International Edition .
- 2: James H Stock and Mark W Watson (2017) - Introduction to Econometrics, third edition,

Pearson, Addison Wesley.

3. Carter Hill, William Griffiths and Guay Lim (2011) – Principles of Econometrics, 4th edition, John Wiley & Sons

4: Jeffrey M Wooldridge (2018) – Introductory Econometrics, a Modern Approach, 7th edition, Thomson South Western.

5: Robert S Pindyck and Daniel L Rubinfeld (1998) – Econometric Models and Economic Forecasts, Fourth edition, McGraw Hill international edition.

6. Dimitrios Asteriou and Robert Hall (2015) – Applied econometrics, 3rd edition, Oxford university press

7. Maddala G S (2002), Introduction to Econometrics, 3rd edition, John Wiley & Sons, New York

8. Greene, W. (1997), Econometric Analysis, Prentice Hall, New York.

9. Ramanathan, Ramu (2002), Introductory Econometrics with Applications, Thomson Learning Inc, Singapore.

10. Johnston J. and J. D. Nardo (1997), Econometric Methods, McGraw Hill, New York.

11. Kmenta, J. (1997), Elements of Econometrics, Michigan Press, New York.

MODEL QUESTION PAPER (CORE COURSE)

**First Semester BA Degree Examination, November 2019
(CBCSS-UG)**

Branch: Economics

Core Course: ECO1B01- Microeconomics I

Time: 2.30 Hours

Max.:80 Marks

Section A

Short Answer Questions. Maximum marks in this section is 25. Students can attempt all questions. Each question carries a maximum of 2 marks.

1. Nature and Scope of Economics
2. Cross elasticity
3. Cobb-Douglas Production Function
4. Properties of iso-quants
5. Engel curve
6. Factors affecting price elasticity
7. Consumer surplus
8. Marginal rate of transformation
9. Price consumption curve
10. Giffen paradox
11. Law of substitution
12. Positive and normative economics
13. Explain ridge lines

14. Production possibility curve
15. Exceptions to the law of demand

Section B

Short Essay/paragraph Questions. Maximum marks in this section is 35. Students can attempt all questions. Each question carries a maximum of 5 marks.

16. Explain properties of indifference curves
17. Explain consumer equilibrium under cardinal utility theory
18. Bring out the relationship between average and marginal costs.
19. Explain the theory of equi-marginal utility
20. Explain the law of variable proportions
21. Distinguish between 'strong ordering' and 'weak ordering'.
22. Elucidate Hicksian method of measuring consumer's surplus.
23. Explain the various types of long run costs curves.

Section C

Long Essay Questions. Answer any two questions. Each question carries a maximum of 10 marks.

24. Examine the decomposition of price effect into income effect and substitution effect using Hicksian and Slutsky's methods
25. Describe the short run and long run cost curves with suitable diagrams
26. Explain the law of diminishing returns with the help of iso-quants.
27. Explain the equilibrium of the consumer under revealed preference hypothesis.

Second Semester BA Degree Examination, May 2020

(CBCSS-UG)

Branch: Economics

Core Course: ECO2 B02- Macroeconomics I

Time: 2.30 Hours

Max.:80 Marks

Section A

Short Answer Questions. Maximum marks in this section is 25. Students can attempt all questions.

Each question carries a maximum of 2 marks.

1. What is Macroeconomics?
2. Illustrate a simple model of circular flow of income
3. What is meant by classical dichotomy?
4. What is money illusion?
5. What do you mean by inflationary gap?
6. Pick the stock variables from the following: GDP, Money supply, Saving, Capital, Investment, Wealth, debt.
7. What is MPC?
8. What is value of multiplier if $MPC = .75$
9. What is balanced budget multiplier?
10. What is liquidity trap?
11. What determines the speculative demand for money?
12. Why does bond price fall when interest rate rise?
13. What is real interest rate?
14. What is fiscal policy?
15. Why are macroeconomic variables important for common people?

Section B

Short Essay Questions. Maximum marks in this section is 35. Students can attempt all questions.

Each question carries a maximum of 5 marks.

16. Explain Say's law of markets.
17. Explain Quantity theory of money using Fisher's Equation of exchange.
18. Distinguish between MEC and MEI.
19. Explain absolute income hypothesis.
20. Given the equations $Y = C + I_0 + G_0$ and $C = a + bY$, which are the endogenous and exogenous variables? Explain.
21. Explain liquidity preference theory.
22. Explain how underemployment equilibrium occurs in Keynesian system.
23. Illustrate why bond price fall when interest rate rise.

Section C

Long Essay Questions. Answer any two questions. Each question carries a maximum of 10 marks.

24. Discuss how income and employment are determined in the Classical system.
25. Explain Keynesian response to the Great Depression using Keynesian cross model.
26. Discuss the different methods of measuring national income.
27. Explain how high-powered money determines money supply.

Third Semester BA Degree Examination November 2020

Branch: Economics (CBCSS)

Core Course: ECO3 B04- Micro Economics II

Time: 2.30 Hours

Max.:80 Marks

Section A

Short Answer Questions. Maximum mark in this section is 25. Students can attempt all questions. Each question carries a maximum of 2 marks.

1. Write down the features of perfect competition.
2. What is shut down point?
3. Distinguish between firm and industry.
4. What is meant by market?
5. Explain peak load pricing.
6. What do you mean by the term two part tariff?
7. Why the supply curve of monopolist is indeterminate.
8. What is selling cost?
9. What is group equilibrium?
10. Explain the term non-price competition.
11. What is direct demand?
12. What is Implicit cost?

13. What is an Increasing cost industry
14. What is Marginal product?

15. Write down any four assumptions of perfect competition

Section B

Short Essay/Paragraph Questions. Maximum marks in this section is 35. Students can

attempt all questions. Each question carries a maximum of 5 marks.

16. Examine the impact of tax on the price and quantity of a commodity in perfect competition.
17. Differentiate supply curve of industry under constant cost, increasing cost and decreasing cost.
18. What will be the effects of lump sum tax and profit tax on monopoly output and price?
19. Discuss different degrees of price discrimination.
20. Explain the factors that give rise to monopoly.
21. Explain kinked demand theory of oligopoly.
22. Distinguish between selling cost and production cost.
23. What is price leadership? Explain different types of price leadership.

Section C

Long Essay Questions. Answer any two questions. Each question carries a maximum of 10 marks.

24. Price of any input is determined in accordance with the marginal product of that input. Critically examine the statement.
25. Describe short run and long run equilibrium under monopolistic competition.
26. The kinked demand curve model explains price rigidity. Explain how the model works?
27. Discuss the various types of factor markets.

**Model Question
Core Paper
Semester-III**

Branch: Econometrics and Data Management

EDM3 B03: Mathematical Methods for Economics- I

2.30 Hours

Max.:80 Marks

Section A

Short Answer Questions. Maximum marks in this section is 25. Students can attempt all questions.

Each question carries a maximum of 2 marks.

1. Define linear equation.
2. Distinguish between terms variables and constants.
3. Solve $\frac{x}{3} + \frac{x}{2} + x = 11$
4. Explain Dual problem in LP
5. How can you identify the nature of roots for a quadratic equation.
6. Solve $2x - y + 3 = 0$ and $xy = 2$.
7. Define Singleton set and disjoint set.
8. Mention use of linear programming
9. Define diagonal matrix. Give an example.
10. Differentiate symmetric and skew symmetric matrix.
11. Define the Jacobian of a function.

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12. Find the determinant of the matrix P
- $$P = \begin{vmatrix} 1 & 6 & -1 \\ 2 & 3 & 3 \\ 3 & -3 & -2 \end{vmatrix}$$
13. Define adjoint of a matrix
14. Define cofactor of a matrix
15. Define the slope of a straight line.

Section B

Short Essay/Paragraph Questions. Maximum marks in this section is 35. Students can attempt all questions. Each question carries a maximum of 5 marks.

16. 3 dozen apples and 6 dozen oranges cost ₹. 36/- and 4 dozen apples and .5 dozen oranges cost ₹. 43.50. Find the price of apples and oranges per dozen.
17. Solve $\frac{x}{7} + \frac{8}{y} = 2$ and $\frac{2}{x} - \frac{12}{y} = 20$
18. Find the equilibrium price and quantity for the demand and supply
- $$x = 64 - 8y - y^2; x = 10y + 5y^2.$$
19. Let $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$, $A = \{1, 2, 4, 5, 7\}$, $B = \{2, 3, 5, 8, 9\}$ and $C = \{1, 3, 7, 8, 10\}$. Find (i) $A \cup (B \cap C)$, (ii) $A \cup (B \cup C)^c$ and

(iii) $A \cap (B \cap C)^c$.

$$\begin{bmatrix} 1 & 0 & -2 \\ & & \end{bmatrix}$$

20. If $A = \begin{bmatrix} 2 & 2 & 4 \\ 0 & 0 & 2 \end{bmatrix}$ show that $A^2 - 3A + 2I = 0$

21. Find the rank of the matrix $\begin{bmatrix} 2 & 1 & 4 & -3 \\ -1 & -2 & 6 & \end{bmatrix}$

22. Find the inverse of the matrix $\begin{bmatrix} 3 & -2 \\ 5 & -4 \end{bmatrix}$

23. What are statistical properties of OLS estimators?

Section C

Long Essay Questions. Answer any two questions. Each question carries a maximum of 10 marks.

24. Use the elimination method to find the equilibrium price and quantity when the demand function is $3P - Q^2 + 5Q - 102 = 0$ and the supply function is $p - 2Q^2 + 3Q + 71 = 0$.

25. (a) What are indifference curves? What are its properties?

(b) A commodity is produced by using 3 units of labor and 2 units of capital. The total cost comes to 62. If the commodity is produced by using 4 units of labor and 1 units of capital the cost comes to 56 What is the cost per unit of labor and capital.

26. Use Crammer's rule to solve the system of equations: $2x + y + 3z = 15$

$$x - 2y + 5z = 13$$

$$4x + 3y - z = 11$$

27. Explain the linear programming and its application in economics.

Model Question
IV Semester BA Degree Examination, March 2020
EDM4 B05- Mathematical Methods for Economic II
Time: 2.30hrs **Max. Marks: 80**

Section A Short answer questions: maximum mark in this section is 25. Student can attend all questions. Each question carries 2 marks.

- 1) Explain demand function.
- 2) Solve $y = 2x^4 + 8x^2 + 5$
- 3) Define limit of a function.
- 4) What is point of inflexion?
- 5) $y = 2x^3 + 4x^2 - x$, find d^2y/dx^2
- 6) What is meant by an increasing function?
- 7) Explain decreasing function.
- 8) What is Leontief Matrix?
- 9) Define AC and MC
- 10) Define random experiment.

- 11) Define marginal cost.
- 12) Write a note on Curve Sketching
- 13) Explain cross elasticity?
- 14) Define mathematically the concept Marginal utility.
- 15) If $AC = 1.5Q + 4 + 46 Q$, find Marginal Cost.

Section B

Short Essay/Paragraph Questions. Maximum marks in this section is 35. Students can attempt all questions. Each question carries a maximum of 5 marks.

16. Explain Properties of Cobb-Douglas production function
17. Discuss CES production function
- 18) What is a time series and explain its components?
- 19) Optimize $Y = -x^3 + 6x^2 + 15x - 32$
- 20) Explain the measurement of elasticity.
- 21) Explain homogeneous production function.
- 22) Explain MR and MC
- 23) What is elasticity of substitution?

Section C Essay type questions. Answer any 2 questions. Each question carries a mark of 10.

- 24) Explain input output analysis. Discuss its application in economics.
- 25) $TR = 1400Q - 6Q^2$ and $TC = 1500 + 80Q$; Find the profit maximizing level of output and maximum profit
26. Explain Constrained optimisation with Lagrange Multiplier
27. Explain mathematically the equilibrium in perfect competition.

Fourth Semester BA Degree Examination March

Branch: Economics (CBCSS)

Core Course: ECO4 B06- Macroeconomics II

Time: 2.30 Hours

Max.:80 Marks

Section A

Short Answer Questions. Maximum mark in this section is 25. Students can attempt all questions. Each question carries a maximum of 2 marks.

1. Define IS curve.
2. What is crowding out effect?
3. What is Keynesian cross?
4. What is GDP deflator?
5. What is Phillips curve?
6. Explain the concept of inflationary gap.
7. What is Okun's law.
8. What are the phases of trade cycle?
9. Define income policy.
10. What is expansionary fiscal policy?
11. What is bank rate? How does it work in the economy?
12. What is inside and outside lag?
13. What is NAIRU
14. Define Inflation targeting
15. Define Business cycles.

Section B

Short Essay/Paragraph Questions. Maximum marks in this section is 35. Students can attempt all questions. Each question carries a maximum of 5 marks.

16. How the Central Bank uses open market operations to control money supply?
17. Explain the objectives and tools of fiscal policy.
18. Examine the causes of great recession of 2008.
19. "Trade cycle is a purely monetary phenomenon" Discuss.
20. Explain Keynes theory of trade cycle.
21. Examine the objectives of macroeconomic policy.
22. Discuss the validity of Phillips curve.
23. How do you explain cost-push theory of inflation? What are its essential features?

Section C

Long Essay Questions. Answer any two questions. Each question carries a maximum of 10 marks.

24. Show how equilibrium is simultaneously determined in the IS-LM model.
25. What are the causes of inflation? Discuss the measures to control inflation in India.
26. Discuss the quantitative and qualitative method of credit control.
27. Explain the goods market and money market equilibrium using IS LM frameworks

FIFTH SEMESTER BA DEGREE EXAMINATION

MODEL QUESTION PAPER

EDM5 B10 - BASIC ECONOMETRICS

TIME: 2.30 HOURS MAX: 80 MARKS

SECTION A

Short Answer Questions. Maximum marks in this section is 25. Each question carries 3 marks.

1. What is time series data?

2. What is dummy variable?
3. What is forecasting?
4. Distinguish between estimate and estimator.
5. Distinguish between point estimation and interval estimation.
6. What is unbiasedness?
7. What is point estimation?
8. What is OLS Estimation?
9. What is linearity?
10. Define Population Regression Function.
11. What is heteroscedasticity?
12. What is the degree of freedom?
13. How can you measure the reliability or precision of an estimator?
14. What is Confidence interval?
15. Explain Type I and Type II errors.

SECTION B (SHORT ESSAY QUESTIONS)

Each question carries maximum of 5 marks. All questions can be attended.

Overall ceiling 35

16. Distinguish between econometrics and mathematical economics.
17. What are the goals of Econometric study?
18. What are the different types of data used in econometric study?
19. What are statistical properties of OLS estimators?
20. What is coefficient of determination? How it can be calculated?
21. What are the significance of a Stochastic Disturbance term?
22. Derive the normal equation for $Y_i = \beta_1 + \beta_2 X_i + U_i$
23. What are the sources of Multi collinearity?

SECTION C (LONG ESSAY QUESTIONS)

Answer any two questions. Each question carries 10 marks

24. Explain the methodology of econometric study.
25. Explain the assumptions underlying the OLS Method with proof.
26. Data on weekly family consumption expenditure and weekly family income are given. Fit a regression line. Calculate β_1 and β_2 and also find r^2 .

Y(consumption expenditure)	70	65	90	95	110	115	120	140	155	150
X (Income) : 80 100	80	100	120	140	160	180	200	220	240	260

27. What is heteroscedasticity and Explain the causes and consequences of Heteroscedasticity.

