

**VIMALA COLLEGE (AUTONOMOUS),
THRISSUR**



**SYLLABUS
FOR
B A ECONOMICS**

Effective from 2019 admission

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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. Instead, economics is better thought of as a collection of questions to be answered or puzzles to be worked out. Most important, economics provides the tools to work out those puzzles. Learning about economics helps you understand the major problems facing the world today, prepares you to be a good citizen, and helps you become a well-rounded thinker.

Among the phenomena that influence our society, those related to the economy attract much attention. Unemployment, inflation, interest rates, exchange rates, jobs, productivity, investment are terms encountered daily in the media. It is not always easy to unravel the mass of information which is conveyed. Economics is the discipline that seeks to understand such phenomena and analyze the relationships between them. More precisely, economics examines how a country's resources are used to fulfill the needs of its citizens. It is concerned with the production, distribution and consumption of goods and services. A well trained economist develops many sensibilities and capacities to understand and improve the workings of various facets of life. The undergraduate program is designed to help produce economists who are socio-politically engaged, quantitatively adept, historically informed and philosophically grounded.

Keeping in mind the above objectives, the new UG Curriculum has incorporated many of the recent economic theories and concepts in the syllabus to equip the students to be thorough in the area of Economics. We have introduced new core courses like Development of Economic Thought, Financial Economics, Behavioural Economics and Basic Econometrics along with a thorough revision of the existing courses.

The finalization of the current syllabus is the result of various deliberations and personal communications with the experts and resource persons in the branch of Economics in and outside the university. I thank one and all for bringing out drastic changes in the existing Syllabi of UG Economics of University of Calicut. A special thanks to the honorable Board Members whose efforts and support has made my task easy. I request the student body to make use the curriculum and Syllabi for your better future.

Dr. C. Krishnan

Chairman (UG Board of Economics)

LIST OF MEMBERS OF BOARD OF STUDIES IN ECONOMICS UG

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REVISED CURRICULUM OF BA PROGRAMME IN ECONOMICS

(Effective from 2019-20 Admissions)

1. Aims and Objectives

The Bachelor's degree Programme in Economics aims to provide theoretical and practical knowledge that makes accurate analysis of the economic situation possible. The Calicut University Economics graduates must be able to understand the interrelation between the economy and society; to consider economic problems from a global perspective and take a local approach to solving them; to make connections between an economic system's different components; to gauge the implications of decisions related to economic policy; and to respond to the economic problems arising from society in general and the different units that interact therein (e.g. institutions, private companies and sectors of the economy). The curriculum covers topics from expanding markets to the impact of 2008 global financial crisis. It provides an excellent background for those who plan careers in government and private enterprise as well as those pursuing graduate degrees in professional schools or in the field of economics

2. 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

3. BA Programmes in Economics

The Board is presenting revised syllabus for BA Economics Programmes with four different Specializations, viz.

1. BA Economics
2. BA Development Economics
3. BA Economics with Foreign Trade
4. BA Economics with Islamic Finance

While most of the core papers remain part of all the programmes, there are some additional courses depending upon the specializations. While BA Development Economics has some additional courses related to development issues, BA Economics with Foreign Trade Programme specializes in foreign trade practices. BA Economics with Islamic Finance gives thrust to Islamic finance. All the three programmes (BA Development Economics; BA Economics with Foreign Trade and BA Economics with Islamic Finance) are equivalent to BA Economics (Regular) programme for the purpose of employment and higher studies.

4. 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 for the qualifying examinations shall be given some weightage while calculating the index marks for admission.

5. Duration of the programme:

The duration of the BA Economics programme is three academic years with six semesters

6. Medium of Instruction and Examination

The medium of instruction and question papers are in English only. However, the students have the option to answer the questions either in English or in Malayalam.

7. CourseStructure

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).

8. 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.

9. 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 Economicsprogramme.

10. 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.

11. 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 opencourse.

12. Elective Course

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.

13. 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.

14. 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

Semester/ Credits	Common courses	Complementary courses	Core Courses	Open Course	Elective Course	Total
I	10	4	5	--	--	19
II	12	4	5	--	--	21
III	8	4	8	--	--	20
IV	8	4	8	--	--	20
V	--	--	16	3	--	19
VI	--	--	18	--	3	21
Total	38	16	60	3	3	120

Note: Note: 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 Economics Programme.

15. Extra Credits

Extra credits are mandatory for the programme. Extra Credits will be awarded to students who participate in activities like NCC, NSS and Swatch Bharath. Those students who could not join in any of the above activities have to undergo the Calicut University Social Service Programme (CUSSP).

16. CALICUT UNIVERSITY SOCIAL SERVICE PROGRAMME(CUSSP)

In this Programme, a student has to complete 12 days of social service. This has to be completed in the first four semesters; 3 days in each semester. For the regular Programme the student has to work in a Panchayath or Local body or in a hospital/ poor home or old age home or in a Pain & palliative centre or any social work assigned by the College authorities. Students who engage in College Union activities and participate in sports and cultural activities in Zonal level have to undergo only 6 days of CUSSP during the entire programme. The whole documents regarding

the student should be kept in the college and the Principal should give a Certificate for the same. The list of students (successfully completed the programme) must be sent to the University before the commencement of the fifth semester examinations. A College level Coordinator and a Department level Co-ordinator shall be appointed for the smooth conduct of the programme

17. Course Code

As already stated, 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). Each course shall have a unique alphanumeric code number, which includes abbreviation of the subject in three letters, the semester number (1 to 6) in which the course is offered, the code of the course (A to E) and the serial number of the course (01,02). The course code will be centrally generated by the university. For example: ENG2A03 represents a common course of serial number 03 offered in the second semester and ECO2B02 representing second semester Core course 2 in Economics programme. The four variants of UG Economics programme of University of Calicut have different subject code as given here under:

Sl.No.	Programme(s)	Subject code of Core Course
1	BA Economics programmes	ECO
2	BA Development Economics	DEC
3	BA Economics with Foreign Trade	EFT
4	BA Economics with Islamic Finance	EIF

18. Structure/Scheme of BA Economics Programme

The semester-wise scheme of BA Economics programme is presented here under.

Semester I				
Course	Code	Name of the paper	Hours	Credit
Common I	A01	Common English Course I	4	3
Common II	A02	Common English Course II	5	3
Common III	A07(1)	Additional Language Course I	4	4
Core 1	ECO1 B01	Microeconomics I	6	5
Complementary (Type 1-Course I)			6	4
Ability Enhancement/Audit I	AUD1E01	Environment Studies	--	4
Total			25	23

Semester II				
Course	Code	Name of the Course	Hours	credit
Common IV	A03	Common English Course III	4	4
Common V	A04	Common English Course IV	5	4
Common VI	A08(1)	Additional Language Course II	4	4
Core 2	ECO2 B02	Macroeconomics I	6	5
Complementary (Type 2-Course I)			6	4
Ability Enhancement/Audit 2	AUD2E02	Disaster Management	--	4
Total			25	25

Semester III				
Course	Code	Name of the Course	Hours	credit
Common VII I	A05	Common English Course V	5	4
Common VIII	A09	Additional Language Course III	5	4
Core 3	ECO3 B03	Quantitative Methods for Economic Analysis I	5	4
Core 4	ECO3 B04	Microeconomics II	4	4
Complementary (Type 2-Course 2)			6	4
Ability Enhancement/Audit 3	AUD3E03	Human Rights/Intellectual Property Rights/ Consumer Protection	-	4
Total			25	24

Semester IV				
Course	Code	Name of the Course	Hours	credit
Common IX	A06	Common English Course VI	5	4
Common X	A10	Additional Language Course IV	5	4
Core 5	ECO4 B05	Quantitative Methods for Economic Analysis II	5	4
Core 6	ECO4 B06 –	Macroeconomics II	4	4
Complementary (Type 1-Course 2)			6	4
Ability Enhancement/Audit 4	AUD4E04	Gender Studies/Gerontology	-	4
Total			25	24

Semester V				
Course	Code	Name of the Course	Hours	credit
Core 7	ECO5 B07	Fiscal Economics	6	4
Core8	ECO5 B08	Indian EconomicDevelopment	6	4
Core 9	ECO5 B09	Economics of Capital Market	5	4
Core 10	ECO5 B10	Mathematical Economics	5	4
Open Course		To be selected from any other Departments	3	3
Total			25	19

Semester VI				
Course	Code	Name of the Course	Hours	credit
Core 11	ECO6 B11	Financial Economics	5	4
Core 12	ECO6 B12	International Economics	5	4
Core13	ECO6 B13	Development of Economic Thought	5	4
Core 14	ECO6 B14	Economics of Growth and Development	5	4
Elective(Choose one among the three)	ECO6 B16	Basic Econometrics	3	3
	ECO6 B17	Behavioural Economics		
	ECO6 B18	Urban Economics		
Project	ECO6 B15	Project work/Research Methodology	2	2
Total			25	21

Note: A 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.

19. 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/Theory	--	--	--	--	--	1
Total	6	6	6	6	5	6

20. Core Courses at aGlance

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	ECO3 B03	Quantitative Methods for Economic Analysis I
	ECO3 B04	Microeconomics II
IV	ECO4 B05	Quantitative Methods for Economic Analysis II
	ECO4 B06	Macroeconomics II
V	ECO5 B07	Fiscal Economics
	ECO5 B08	Indian Economic Development
	ECO5 B09	Economics of Capital Market
	ECO5 B10	Mathematical Economics
VI	ECO6 B11	Financial Economics
	ECO6 B12	International Economics
	ECO6 B13	Development of Economic Thought
	ECO6 B14	Economics of Growth and Development
	ECO6 B15	Project/Research methodology

21. 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 Economics programme with the option for choice (**two Complementary courses can be selected**).

1. History
2. Political Science
3. Sociology
4. Psychology

5. **Mathematical Tools for Economics**
6. **Co-operation**
7. **Banking**
8. **Introductory Economics (For Non-Economics Programmes)**

22. 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.

- ECO5 D01 - Economics in Everyday Life**
- ECO5 D02 – Indian Financial System**
- ECO5 D03 – Kerala Economy**

23. 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.

- ECO6 B16–Basic Econometrics**
- ECO6 B17– Behavioural Economics**
- ECO6 B18– Urban Economics**

24. Project - ECO6 B15(Pr)

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. The college may also choose a theory course on Research Methodology instead of Project work. But a college cannot choose both project and research methodology courses simultaneously.

25. Study Tour

A compulsory study tour is recommended as part of the paper entitled "Indian Economic Development" in the Fifth Semester and the tour report should be submitted to the Head of the Department soon after the tour.

26. 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.

26.1. 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 CRP < 75%	1	1
75% \leq CRP < 85%	2	2
85 % and above	4	3

26.2. 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.

26.3. 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 mark 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	Second Class
45 to below 55	C	Average	5	4.5 -5.49	
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

27. 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

28. PROJECT EVALUATION- Regular scheme only

1. Evaluation of the Project Report shall be done under MarkSystem.
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

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.

29. 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.

30. 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.

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

Preamble: This course is designed to expose first semester students, who may be new to economics, the basic principles of microeconomic theory. The emphasis will be on thinking like an economist and the course will illustrate how microeconomic concepts can be applied to analyze real-life situations.

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:

1. Dominick Salvatore(2003): Microeconomics: Theory and Applications- 4thEdition, Oxford University Press.
2. Robert S Pindyck and Daniel L Rubinfeld(2009): Microeconomics- 8thEdition, Pearson India.
3. Watson and Getz (2004): Price Theory and its Uses- 5thEdition, AITBS Publishers and Distributors.
4. A Koutsoyiannis (1979): Modern Microeconomics- 2ndEdition, Macmillan.
5. G S Madalla and Ellen Miller (1989): Microeconomics: Theory and Applications- Tata McGraw-Hill.
6. Robert A Awh (1976): Microeconomics: Theory and Applications- John Wiley & Sons.
7. H.R Varian (2009) , Intermediate Microeconomics- A Modern Approach., W W Norton & Co Inc; 8thedition
8. Gregory Mankiw (2006) Principles of Microeconomics,(Paperback) South Western Educational Publishing
9. Jhingan, M.L., (2017)., Micro Economic Theory, Vrinda Publications (P) Ltd, Delhi

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

Preamble: Macroeconomics emerged as a separate discipline following the failure of classical economics to diagnose the reasons of the Great Depression in the 1930s. ‘The General Theory of Employment, Interest and Money’ published by John Maynard Keynes in 1936 was the influential book which laid the foundation of Macroeconomics. Today, principles of macroeconomics help us understand the trends in aggregate variables like national income, employment, price level and investment. It also helps us explore and understand the determinants of short run fluctuations and long run movements in these variables. The course is designed to give a rigorous overview of macroeconomics to the undergraduate students. It will give the necessary ideas and tools to understand the working of an economy at the aggregate level. The course is also expected to give an idea about the need for and the way in which government intervention is required in a modern economy. After completing this course, the student will be able to appreciate the context in which Macroeconomics emerged as a separate discipline. The student will be able to explain how output and employment are determined in classical and Keynesian systems. Student should also be able to explain why actual output will fall short of the productive capacity of the economy.

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 NominalGDP.

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
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

Semester III

Course Category	Core Course 3
Course Title and Code	Quantitative Methods for Economic Analysis - I ECO3 B03
No. of Credits	4
No. of Contact Hours	5 Hours per week

QUANTITATIVE METHODS FOR ECONOMIC ANALYSIS – I

Preamble: Students of economics should have sound quantitative skills to collect, analyse and interpret empirical data. They also require these skills for advanced studies in quantitative economics. Quantitative skills have become an essential toolkit for most branches of economics. This course is intended to provide students an introduction to quantitative methods and tools that are used in the study of economics at the undergraduate level. The aim of this course is to develop skill in statistical and mathematical techniques that are required for a meaningful study of applied economics and for carrying out empirical their further study in most branches of economics.

Module I –Basic Concepts

Exponents and logarithms-Equations –Linear, quadratic and simultaneous equations up to three unknowns- Functions –types and their applications in economics –Introduction to co-ordinate geometry, Graphs, Slope and Intercepts, Equations of Straight Lines.

Module II - Basic Matrix Algebra:

Matrix -Meaning and types, Matrix operations, Addition, Subtraction and Multiplication- Properties of Matrix multiplication, Transpose of matrix, Determinant and their properties (Up to 3×3) – Minor and Cofactors – Rank of a Matrix- Solving linear equations using Matrix Inverse- - Cramer's rule

Module III – Univariate Analysis

Univariate Analysis: -Frequency Tables, Representation of data-Frequency Polygon, Ogives and Pie diagram. Measures of Central tendency - Arithmetic Mean, Median, Mode, Geometric Mean and Harmonic Mean -. Measures of Dispersion: Absolute and Relative measures of Dispersion – Range, Quartile Deviation, Mean Deviation and Standard Deviation, Coefficient of variation - Lorenz Curve - Gini Coefficient - Skewness and Kurtosis.

Data management using Spread Sheet : Mean, Median, Mode, Dispersion, Coefficient of Variation -Graphical Presentation of Data: Line, bar, pie diagrams.

Module IV: Correlation and Regression Analysis

Correlation-Meaning, Types- Methods of Measuring Correlation-Graphical: Scatter Diagram and correlation Graph; Algebraic Methods: Karl Pearson's Coefficient of Correlation and Rank Correlation Coefficient -Simple linear regression - Meaning, Principle of Ordinary Least Squares and Regression Lines-Correlation and Regression using spread sheet.

References:

1. Allen , R.J.D. Mathematical Analysis for Economics ,Macmillan Press,London
2. Dowling Edward T, Mathematical Methods for Business and Economics, SchaumsOutlineSeries, McGraw Hill, 1993
3. Dowling Edaward.T, Introduction to Mathematical Economics, 2nd/3rd Edition, Schaum's Outline Series, McGraw-Hill, New York,2003
4. Taro Yamane, Mathematics for Economists: An Elementary Survey, Prentice Hall ofIndia
5. Sydsaeter K and Hammond P, Essential Mathematics for Economic Analysis, PrenticeHall
6. Haeussler Earnest F, Paul Richard S and Wood Richard, Introductory Mathematical Analysis Peason Education ISBN0131276298
7. Bressler Barry, A Unified Introduction to Mathematical Economics, harper and Row Publishers,ISBN0060409525
8. Anderson, Sweeney and Williams, Statistics for Business and Economics, Thomson Education
9. Lind D.A., W.G. Marchal and S.A Wathen., Statistical Techniques in Business and Economics, Tata McGraw Hill, New Delhi
10. Gupta S. P, Statistical Methods, Sultan Chand and Sons, NewDelhi
11. Aczel D Amir and Sounderpandian Jayavel, Complete Business Statistics, Tata McGraw Hill Publishers, Newdelhi ISBN 0070620164
12. Richard I Levin et.al. *Statistics for management*. India: PearsonEducation.
13. John Walkenbach, MS Excel 2007, Wiley India Publishers,2008

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

Preamble: This course is designed to introduce fundamental market concepts and structures. The emphasis of the course is to give conceptual clarity to the student coupled with the use of the principles of micro economic analysis to the decision making of firms and market. After completing this course, the student will be able to apply the principles of micro economics, to the decision making of firms and the functioning of the market.

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-Cournot model- 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	Quantitative Methods for Economic Analysis II ECO4 B05
No. of Credits	4
No. of Contact Hours	5 Hours per week

QUANTITATIVE METHODS FOR ECONOMIC ANALYSIS – II

Preamble: This course is designed to transmit the body of basic statistics and mathematics that enables the study of economic theory at the undergraduate level. The aim of this course is to equip the students to quantify economic variables and to enable them to apply statistical techniques in Economics. After completing this course, the student will be able to apply statistical and mathematical techniques in Economics.

Module I: Differential Calculus

Limits and Continuity – Differentiation - Rules, Derivative of single variable and multi variable Functions (except Trigonometric and logarithmic Function), Higher Order Derivatives – Partial differentiation- Optimization - Maxima and Minima of Functions. – Economic Application of Derivatives – Marginal Concepts (MU, MR,MP, Elasticity etc)

Module II: Index Numbers and Time Series Analysis

Index Numbers: Meaning and Uses- Unweighted and Weighted Index Numbers: Laspeyre's, Paasche's, Fisher's, Dorbish-Bowley, Marshall-Edgeworth and Kelley's Methods - Tests of Index Numbers: Time Reversal and Factor Reversal tests - Base Shifting, Splicing and Deflating
-CPI and WPI - Stock Price Indices: BSE-SENSEX and NSE-NIFTY. Time Series Analysis - Components of Time Series - Measurement of Trend by Moving Average and the Method of Least Squares.

Module III: Vital Statistics

Vital Statistics: Meaning and Uses- Fertility Rates: Crude Birth Rate, General Fertility Rate, Specific Fertility Rate, Gross Reproduction Rate and Net Reproduction Rate - Mortality Rates: Crude Death Rate, Specific Death Rate, Infant Mortality Rate and Maternal Mortality Rate - Sex Ratio and Couple Protection Ratio.

Module IV- Fundamentals of probability

Basic probability concepts: – Mutually exclusive and collectively exhaustive events – statistically independent events, sample space, events. Types of probability – *A Priori*
Classical probability – Empirical Classical Probability – Subjective Probability.

References

1. Allen , R.J.D. Mathematical Analysis for Economics ,Macmillan Press,London
2. Dowling Edward T, Mathematical Methods for Business and Economics, Schaums Outline Series, McGraw Hill,1993
3. Bressler Barry, A Unified Introduction to Mathematical Economics, harper and Row Publishers,ISBN0060409525
4. Sydsaeter K and Hammond P, Essential Mathematics for Economic Analysis, PrenticeHall
5. Dowling Edaward.T, Introduction to Mathematical Economics, 2nd/3rd Edition, Schaum's
6. Outline Series, McGraw-Hill, New York,2003
7. Anderson, Sweeney and Williams, Statistics for Business and Economics, Thomson Education
8. Lind D.A., W.G. Marchal and S.A Wathen., Statistical Techniques in Business and Economics, Tata McGraw Hill, New Delhi
9. Gupta S. P, Statistical Methods, Sultan Chand and Sons, NewDelhi
10. Richard I Levin et.al. *Statistics for management*. India: PearsonEducation.
11. Aczel D Amir and Sounderpandian Jayavel, Complete Business Statistics, Tata McGraw Hill Publishers, New delhi ISBN 0070620164
12. William G. Cochran, Sampling Techniques, John Wiley,2007

Semester IV

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

MACROECONOMICS – II

Preamble: IS-LM framework is a versatile tool used in understanding the working of modern economies. Hence it is widely used in policy formulation too. Phillips curve also was used widely for policy formulation, until it collapsed following the stagflation of 1970s. New concepts like NAIRU developed afterwards. Market economies have always experienced cyclical fluctuations in economic activity. Fiscal and monetary policies have been effectively employed by governments to fight such fluctuations. The objective of this course is to give a rigorous overview of macroeconomics to the undergraduate students. The course is designed to give the necessary ideas and tools to understand the working of an economy at the aggregate level. The course is also expected to give an idea about the need for and way in which government intervention is required in a modern economy. After completing this course a student should be able to derive IS-LM curves and use the framework to explain the working of an economy. A student should also be able to explain the way fiscal and monetary policy works, using the ISLM framework. Student should also be able to explain the concept and measurement of inflation and unemployment. Similarly, a student should also be able to explain the trade-off between inflation and unemployment as predicted by the Phillips curve and its collapse after the stagflation of 1970s.

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’, Pearsoneducation.
 4. Eugene Diulio – Macro economic Theory, Shaum’s Outline series. Tata McGraw Hill
 - 5.Errol D’Souza – ‘Macro Economics’ – Pearson Education2008.
 - 6.AbhijitKundu (2009) : Methodology and Perspectives of Social Science – Pearson Education8
 7. Dornbusch, Fischer and Startz-MacroEconomics-Tata McGraw– Hill Additional Reference
1. Lipsey R. and A Chrystal – Economics (11th Edition) Oxford University Press NewDelhi.
 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	6 Hours per week

FISCAL ECONOMICS

Preamble: Fiscal economics deals with the fisc (treasury) of the country. It is related to decision making in the public sector or finance of the government. The basic aim of this course is to introduce students to the application of the techniques, methods and principles of Economics for decision making in fiscal economics. After completing this course students are expected to learn how the principles of economics can be applied to sound decision making in public finance. They are expected to learn to analyse the financial activities of a government and to understand the important economic issues that government agents face. Training in fiscal economics will help students in higher studies.

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), "Public Finance in Theory and Practice", McGraw Hill International Edition.
3. Tyagi B.P. (1992-93) "Public Finance", Jai Prakash, Nath Co., Meerat, U.P
4. Uma Kapila (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" – Kalyanipublications
9. Jha R, (1998) "Modern Public Economics", Routledge London.
10. Good and Service Tax (GST) (2019)-Concept & Status.-Central Board of Indirect Taxes and 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

Preamble: The course is designed to expose the learners to some of the key issues facing the Indian economy both at national and regional levels. In this process, as young adults, students are expected to be sensitised about these issues, appreciate and learn to critically assess the role of the government in various economic spheres. The learners are also exposed to numerical information relating to various aspects of Indian economy and India's economic policies. They are expected to develop analytical skills, interpret the economic events and visualise the economic future of India. For all these to happen, teachers are requested to take special care to instruct the students to read the suggested reference books, collect clippings and articles from newspapers and magazines and also develop the habit of following economic survey, economic review and RBI Bulletin. Besides, as against the conventional assignments, each module has '**Suggested Additional Activities**' at the end. Teachers need to encourage the learners to explore beyond the texts while attempting these activities.

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 2012-13. 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 not, 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.

References:

1. Economic development in India-Problems and Prospects, N.P. Abdul (Ed), Regal Publications, New Delhi
2. Indian Economy, Gopalji Gupta, PEARSON, New Delhi.
3. Ahulwalia, I.J. and I.M.D. Little (Eds) (1999), *India's Economic Reforms and 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, New Delhi
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.
11. Brahmananda, P.R. and V.R. Panchmukhi (Eds) (1987), *The Development Process of Indian Economy*, Himalaya Publishing House, Bombay.
12. M.P Todaro, *Economic Growth* (2nd Edition), PEARSON, New Delhi
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	Economics of Capital Market ECO5 B09
No. of Credits	4
No. of Contact Hours	5 Hours per week

ECONOMICS OF CAPITAL MARKET

Preamble: In the present Globalised world financial institutions and markets play a significant role. The financial sector liberalization across the world including India has led to unprecedented growth in the financial sector, especially in the capital market, leading to the introduction of new and diversified financial instruments and financial practices, providing ample career opportunities to the students of economics. This course is designed to give an exposure to the students of economics to the changing world of financial markets and to give them an opportunity to familiarize with the basic concepts related to capital market which they read in newspapers and hear and see through electronic media in their daily walks of life. This course also aims at providing a platform to the students of economics in developing the skills required to take up a career in financial sector and to provide them an opportunity to think of higher studies in finance which may open them vast career opportunities in the field of finance.

Module I: Financial Assets

Financial Assets – Tangible and Intangible Assets – Debt Vs Equity – Properties of Financial assets-Financial markets – Classification of Financial Markets – Financial System and Economic Development – Weakness of Indian Financial System.

References:

1. Frank J. Fabozzi and Franco Modigliani, —Capital Markets – Institutions and Instruments||, Pearson Prentice Hall, New Delhi (Latest Edition).
2. Gordan K. Natarajan, —Financial Markets and Services||, Himalaya Publishing House, Mumbai (Latest Edition).

Module II : Capital Market

Capital market – Meaning, Characteristics and Functions – Importance of Capital Markets in an economy – The structure of Indian capital market – Capital market instruments – Equity shares (rights shares, bonus shares, bluechip shares), Debentures or Bonds (Convertible, non-convertible, partly convertible, fully convertible, redeemable and irredeemable), Government securities, Euro Issues – GDRs, ADRs, Foreign Currency Convertible Bonds (FCCB) – **Capital Market Institutions**-DIIs, FIIs, Mutual Funds – Securities and Exchange Board of India (SEBI) – Objectives, Functions and Powers.

References:

1. S. Gurusamy, *Capital Markets*, Vijay Nicole Imprints Private Limited, Chennai(Latest edition)
2. Shashi K Gupta, Nisha Aggarwal and Neeti Gupta, *Financial Markets and Institutions*, Kalyani publishers, New Delhi (Latest edition)
3. M.Y. Khan, *Indian Financial System*, Tata McGraw Hill Education Private Limited, New Delhi (Recent edition)
4. Online Resource : www.sebi.gov.com

Activities/Assignments:

1. Students may be asked to note down the important mutual funds operating in India and different schemes offered by some of them and their descriptions. (eg: Growth Funds, Open end Funds etc.)

Module III : The Primary Market (New Issues Market)

Meaning and Functions of Primary Market – Methods of Floating New Issues – Pure Prospectus method, Private Placement Method, IPO Method, Rights Issue Method, Bonus Issue Method, Book Building Method, Employee Stock Option (ESOP) – **Intermediaries in New Issues Market**

– Merchant Bankers/Lead Managers, Registrars to an Issue, Underwriters, Bankers to an Issue, Brokers to an Issue, Debenture Trustees – Causes for Poor performance of New Issues Market.

References:

1. S. Gurusamy, *Capital Markets*, Vijay Nicole Imprints Private Limited, Chennai(Latest edition)
 2. Shashi K Gupta, Nisha Aggarwal and Neeti Gupta, *Financial Markets and Institutions*, Kalyani publishers, New Delhi (Latest edition)
 3. S. Gurusamy, *Financial Markets and Institutions*, Vijay Nicole Imprints Private Limited, Chennai(Latest edition)
 4. S.N. Sasidharan and S. Aiyappan Pillai, *An Introduction to Capital Market*, Right Publishers, Kudavechoor (Latest edition)
 5. L.M. Bhole, *Financial Institutions and Markets-Structure, Growth and Innovations*, Tata McGraw Hill Publishing Company Limited, New Delhi (Latest edition)
- Activities/Assignments:*

1. Show specimen of share application form (IPO) and ask the students to note down the important terms mentioned in the form. Tell them to write down the meaning of all such terms (eg: QIB, Retail Investor, Cap Price etc) and institutions related to IPO.
2. Ask the students to fill up the share application form so as to acquire some practical skills in the subject.
3. Students may be introduced to a specimen of Demat Account opening Form. (Available with DPs like Geojith Securities, JRG Securities, Stock Holding Corporation of India or other Stock Broking firms)

Module IV: The Secondary Market – Stock Exchanges

The Secondary Market – Difference between Primary market and Secondary Market – Listing of Securities – Physical Shares and Demat Shares – Depository Participant (DP) – NSDL and CSDL – Meaning and Definition of Stock Exchanges – **Functions of Stock Exchanges** – Origin

and Development of Stock Exchanges in India – Bombay Stock Exchange (BSE) - National Stock Exchange (NSE) – Over the Counter Exchange of India (OTCEI) – Stock Market Index in India and Abroad: SENSEX and Nifty – NASDAQ, DOWJONES, FTSE, Nikkei.

References:

1. S. Gurusamy, *Capital Markets*, Vijay Nicole Imprints Private Limited, Chennai(Latest edition)
2. ShashiKGupta,NishaAggarwalandNeetiGupta, *Financial Markets and Institutions*, Kalyani publishers, New Delhi (Latest edition)
3. S. Gurusamy, *Financial Markets and Institutions*, Vijay Nicole Imprints Private Limited, Chennai(Latest edition)
4. S.N. Sasidharan and S. Aiyappan Pillai, *An Introduction to Capital Market*, Right Publishers, Kudavechoor (Latest edition)
5. L.M. Bhole, *Financial Institutions and Markets-Structure, Growth and Innovations*, Tata McGraw Hill Publishing Company Limited, New Delhi(Latest edition)
6. Online resources: i) www.nseindia.com ii) www.bseindia.com

Activities/Assignments:

1. Ask students to visit SEBI website and collect data on purchase, sale and net investment in equity and debt instruments by FIIs in Indian Stock Market (Also available in financial dailies like Economic Times, Businessline etc.)
2. Ask students to visit the BSE website and note down the shares of companies included in SENSEX and their relative weightage in the index.
3. Ask students to visit the NSE website and note down the shares of companies included in NSE Nifty and their relative weightage in the index.
4. Students may be asked to find out other different indices published by BSE and make a short note of these indices from BSE website (eg: BSE PSU Index, BSE TECH Index etc.)
5. Students may be directed to study the share holding pattern of some of the shares of companies listed at BSE or NSE. (Available also at www.moneycontrol.com)

Note:

1. **Students may be motivated to read financial dailies like Economic Times, Business Line, Business Standard, Dhanam etc regularly in order to get a proper understanding of the terms and concepts and the working of capital markets.**
2. **Students may be encouraged to watch exclusive financial channels like CNBC TV18, NDTV PROFIT etc, to get an idea of stock trading and capital market activities.**
3. **If possible students may be taken to a stock trading terminal so as to get an idea of the online buying and selling of shares.**

Additional Reading:

1. M. Y. Khan, *Indian Financial System*, Tata McGraw Hill Education Private Limited, New Delhi (Latest Edition)
2. L.M. Bhole and Jitendra Mahakud, *Financial Institutions and Markets – Structure, Growth and Innovations*, Tata McGraw Hill Education Private Limited, New Delhi (Latest Edition)
3. Bharathi V. Pathak, *The Indian Financial System – Markets, Institutions and Services*, Pearson, New Delhi (latest edition)
4. K.L. Garg, *Stock Exchanges in India*, Bookland Limited, Calcutta.
5. V.A. Avadhani, *Investment and Securities Market in India*, Himalaya Publishing House, Bombay (Latest edition)

Semester V

Course Category	Core Course 10
Course Title and Code	Mathematical Economics ECO5 B10
No. of Credits	4
No. of Contact Hours	5 Hours per week

MATHEMATICAL ECONOMICS

Preamble: Mathematical economics is an approach where mathematical symbols and theorems are used for economic analysis. Modern economics is analytical and mathematical in structure. Thus the language of mathematics has deeply influenced the whole body of the science of economics. Every student of economics must possess a good proficiency in the fundamental methods of mathematical economics. One of the significant developments in Economics is the increased application of quantitative methods and econometrics. A reasonable understanding of econometric principles is indispensable for further studies in economics. This course is aimed at introducing students to the most fundamental aspects of mathematical economics and econometrics. The objective is to develop skills in these. It also aims at developing critical thinking, and problem-solving, empirical research and model building capabilities of the student which will help them to build and test models in economics and related fields. The course will also assist them in higher studies in economics..

Module I: Introduction to Mathematical Economics

Mathematical Economics: Meaning and Importance- **Mathematical Representation of Economic Models- Economic functions:** Demand function, Supply function, Utility function, Consumption function, Production function, Cost function, Revenue function, Profit function, saving function, Investment function

Module II: Marginal Concepts

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- Relationship between Average Cost and Marginal Cost - **Elasticity: Price elasticity, Income elasticity, Cross elasticity.**

Module III: Optimisation

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

Module IV: 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 V: Market Equilibrium

Market Equilibrium: Perfect Competition- Monopoly- Discriminating Monopoly

Note to faculty / question paper setter: 1. This course is for B.A. Economics course. The students of this course may not have studied mathematics at higher secondary level. Hence questions may be confined to intermediary level. 2. Kindly give due consideration and adhere to the weightages indicated in the syllabus while setting question paper also.

References:

1. Dowling E.T, Introduction to Mathematical Economics, 2nd Edition, Schaum's Outline Series, McGraw-Hill, New York, 2003 (ETD)
2. Chiang A.C. and K. Wainwright, Fundamental Methods of Mathematical Economics, Tata McGraw-Hill Education; Fourth edition (2013)
3. Henderson, J. M. and R.E. Quandt (1980), Microeconomic Theory: A Mathematical Approach, McGraw Hill, New Delhi.
4. James Bradfield, Jeffrey Baldani, An Introduction to Mathematical Economics, Cengage Learning India Pvt Ltd (2008)
5. A. Koutsoyiannis, Modern Microeconomics, Palgrave Macmillan; 2nd Revised edition (2003) – see mathematical appendices for each topic

Semester VI

Course Category	Core Course 11
Course Title and Code	Financial Economics ECO6 B11
No. of Credits	4
No. of Contact Hours	5 Hours per week

FINANCIAL ECONOMICS

Preamble: This course intends to familiarize the students with the basic concepts in financial economics along with some of the basic models which are used to benchmark valuation of assets and derivatives. These include the CAPM, and the Binomial Option Pricing models. After completing this course, the student will be able to develop comprehensive knowledge on the role of finance in the operation of an economy. It also enables them to know the operation of the Indian Financial System and activities in the financial markets.

Module I: Investment Theory and Structure of Interest rates

Introduction to financial economics, Time Value of Money: Future Value, Present Value, Future value of an annuity, Present value of annuity, Present rate of perpetuity. Investment Criteria: Net Present Value, Benefit Cost Ratio, Internal Rate of Return, Modified Internal Rate of Return.

Module II: Valuation of Bonds and Securities

Fundamentals of Valuation of Securities: Valuation of Bonds and Stocks; Bond Yield, Yield to Maturity. Equity Valuation: Dividend Discount Model, The P/E Ratio Approach; Irrelevance of Dividends: Modigliani and Miller Hypothesis.

Module III: Risk and Return

Types of risk, Historical returns and Risk, computing historical returns, average annual returns, variance of returns, Measurement of Risk and Return of an asset, Measurement of Risk and Return of a Portfolio, Determinants of Beta, Risk-Return trade off.

Module IV: Cost of Capital and Capital Asset Pricing Model

The Cost of Capital: Debt and equity; Cost of Debt, Cost of Preference Capital and Equity Capital. The capital market line; the capital asset pricing model; the beta of an asset and of a portfolio; security market line; use of the CAPM model in investment analysis and as a pricing formula.

Module V: Derivative Markets

An introduction to financial derivatives: Types and uses of derivatives; Forward Contracts: determination of forward prices, Futures Contract: theories of future prices- the cost of carry model, the expectation model, capital asset pricing model. Relation between Spot and Future Prices, forward vs future contract, Hedging in Futures; Options: types, value of an option, the Pay-Offs from Buying and Selling of Options; the Put Call Parity Theorem; Binomial option pricing model (BOPM) and Black-Scholes option pricing model.

References

1. L. M. Bhole and J. Mahukud, *Financial Institutions and Markets*, Tata McGraw Hill, 5th edition, 2011.
2. Hull, John C., *Options, Futures and Other Derivatives*, Pearson Education, 6th edition, 2005.

Additional Reading List

1. David G. Luenberger, *Investment Science*, Oxford University Press, USA, 1997.
2. Thomas E. Copeland, J. Fred Weston and Kuldeep Shastri, *Financial Theory and Corporate Policy*, Prentice Hall, 4th edition, 2003.
3. Richard A. Brealey and Stewart C. Myers, *Principles of Corporate Finance*, McGraw-Hill, 7th edition, 2002.
4. Stephen A. Ross, Randolph W. Westerfield and Bradford D. Jordan, *Fundamentals of Corporate Finance*, McGraw-Hill, 7th edition, 2005.

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

Preamble: International economics deals with the economic relations among nations --- both trade and financial relations—A good understanding in international economics is necessary for a student of economics and those who wish to work in these areas or governmental organizations. The basic aim of this introductory course on international economics is to present before the students the questions, and answers, related to international economic relations. The students are expected to acquire skill that will help them to take rational decisions in issues related to international economics.

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 - Heckscher – 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, New Delhi.
2. C.P. Kindleberger, 'International Economics'
3. Bo Soderstein and Geoffrey Reed, 'International Economics', Macmillan
4. Carbaugh, 'International Economics', Cengage Learning
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	Development of Economic Thought ECO6 B13
No. of Credits	4
No. of Contact Hours	5 Hours per week

DEVELOPMENT OF ECONOMIC THOUGHT

Preamble: This course presents review of the history of economic thinking and economic analysis.: The main goal of this course is to provide students with understanding of historical evolution of economic thought. In addition students are also led to familiarize with

- i) Developments in major field of economics,
- ii) Schools of thought in economics
- iii) Works of some great economist from antiquity to contemporary times.

By the end of this course student will be able to identify the major ideas associated with each group or thinker studied, and thereby the origins of contemporary theory are better comprehended. They are expected to place the theories and ideas studied within the context of the times in which they developed, evaluate different streams of economic thinking as well some personalities who had a major impact on the history of economic thought. Students are also expected to identify theories that radically differ from modern mainstream theory, and thereby recognize that the theoretical basis of economics has been, and continues to be, contested.

Module I: Mercantilism & Physiocrats

Mercantilism-Main characteristics - Limitations of national resources. Importance of Foreign Conquest, Colonization and Trade, Role of State in Foreign Trade, Definition of Wealth and the ways in which to augment it, Importance of the Balance of Trade, Works of Francis Bacon, Thomas Mum, Josiah Child, John Cary, Charles Davenant, John Stuart Mill Age of Enlightenment – France, Italy, Scotland. The Physiocratic school. Definition of surplus. The organization of economic activities and transactions. The Tableau Economique Works of Jacques Turgot, Francois Quesnay, Richard Cantillon.

Module II: British Political Economy

Nature of the Surplus, Source of Value, Measure of Value, Market Prices and Natural Prices, Profits and Wages, Gross and Net Revenue (national income), Income Distribution, Works of Adam Smith, David Ricardo, Robert Malthus, Objections raised by J. B. Say, Charles Dupuit, W Stanley Jevons, and Leon Walras, J.M. Keynes

Module III: Socialism

Rise of Socialist ideas, Political background, Ricardian Theory of Rent, Nationalization of Land, French Socialists, Marxism, Marx's writings in theoretical economics. The Marxian twist, Marxism post – 1991 - Schumpeter's Critique

Module IV: Indian Economic Thought

Early Indian economic thought - Chanakya's Arthashastra - Colonial Economic policies, Unfair treatment of the colonies, Nationalist response, Swadeshi Movement. Economic ideas of M. G. Ranade, Dadabhai Naorojee, Gopal Krishna Gokhale, Dr. B. R. Ambedkar, M.K. Gandhi

References:

1. Loganathan.VA, A History of Economic Thought, S Chand & Company, New Delhi (1987)
2. Srivastava S K - History of Economic Thought S Chand & Company, New Delhi (2002)
3. Ganguly B.N - Indian Economic Thought, A Nineteenth Century Perspective, McGraw Hill (1977)
4. Grid and Rist, A History of Economic Doctrines, George Harrop, London (1956)
5. Louis Haney - History of Economic Thought, Surjit Publications, New Delhi (1977)
6. Ernesto Screpanti and Stefano Zamagni, An Outline of History of Economic Thought, Oxford University Press, Second Edition (2005)
7. Grey and Thomson, The Development of Economic Doctrine, Longman Group, London (1980)

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

Preamble: This course is designed to introduce students to the exciting and challenging subject of economics of growth and development, which draws from several branches of economics. It intends to provide the theoretical framework for growth and development discourses under different schools of economic thoughts and also into better insights and knowledge on issues and challenges on economic development. It also aims to equip students with the ability to analyze the factors affecting the long run economic growth, both from a positive and negative sense.. After completing this course the student should also be able use theories of growth and development to analyze the problems of the developing world. The students are expected to develop an interrelated to approach to resource use.

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- AKmodel.

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 UniversityPress.

Semester VI

Course Category	Core Course 15/Project
Course Title and Code	Project work/Research Methodology ECO6 B15
No. of Credits	2
No. of Contact Hours	5 Hours per week

PAPER I

RESEARCH

METHODOLOGY

Preamble: This course is designed to introduce the undergraduate students the importance of research methodology and its basic tools for understanding the social reality .It intends to provide exposure to the fundamentals of techniques and methods in social research. It helps them to equip themselves the ability to understand and participate in the process of economic research. It also helps to familiarize the student with the quantitative and qualitative strategies of research in social science. After completing this course the student should also be able to develop research project and work with a research problem..

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	Basic Econometrics ECO6 B16
No. of Credits	3
No. of Contact Hours	3 Hours per week

BASIC ECONOMETRICS

Preamble: This course provides a comprehensive introduction to basic econometric concepts and techniques. It covers statistical concepts of hypothesis testing, estimation and diagnostic testing of simple and multiple regression models etc. The aim of this course is to provide a foundation in econometric analysis and develop skills required for empirical research in economics. Topics include specification and selection of regression models, dynamic econometric models, advanced methods in regression analysis and econometric problems.

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: Extensions of the Two Variable Regression Model

Functional forms of regression models, log-log, log-lin, lin-log and reciprocal models.

Module IV: 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.

Module V: Econometric Problems

Multicollinearity- Nature, consequences, detection and remedial measures-Autocorrelation- Nature, consequences, detection, and remedial measures- Heteroskedasticity-Nature, consequences, detection and remedial measures.

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.

Semester VI

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

BEHAVIORAL ECONOMICS

Preamble: Whereas the standard economic models assumes maximization of utility function ,behavioural economics considers the ways that people are more social, more impulsive, less adept at using information, and more susceptible to psychological biases . This course will provide students with a clear introduction to the principles and methods of behavioural Economics The main aim of the course is to explain economic decision-making process and role of psychology in it. After studying the course the student will be able to elaborate the deviation in reality and standard economic theoretical predictions in the framework of behavioral 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

ModuleII:

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, Hyberbolic 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”, PalgraveMacmillan
2. M.Altman,HandbookofContemporaryBehaviouralEconomics:FoundationandDevelopments(2007), Prentice HallIndia
3. E. Cartwright, Behavioural Economics (2011),Routledge
4. D. Kahneman, Thinking Fast and Slow (2011), Allen Lane, PenguinBooks
5. G. Loewenstein, Exotic Preferences: Behavioural Economics and Human Motivation (2007),Oxford UniversityPress
6. SanjitDhami, "The Foundations of Behavioral Economic Analysis", Oxford University Press(2016)
7. BehavioralEconomics:Toward aNewEconomicsbyIntegrationwithTraditionalEconomicsbyOgaki, Masao, Tanaka, Saori C. Published by Springer, ISBN978-981-10-6439-5
8. NickWilkinson;MatthiasKlaes(2012),AnIntroductiontoBehavioralEconomics,2ndEdition,Palgrave Macmillan.
9. World Development Report 2015: Mind, Society, andBehavior

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

Preamble: Why do most people prefer to live in cities? What happens when they live in cities? What problem do they face in cities? Generally, development of cities occurs with development of industrial townships. However, urbanization becomes a problem, since there is a shortage of space, lack of amenities, and traffic congestion. This course will teach students about urban economics, models of development and planning, urban growth, Land uses, Housing, Public urban transport, Slums, urban environment problems and It will also equip the student with the basic theoretical premises and analytical tools that are used in urban economics. After completing this course, the student will be able to analyse the current policy issues and programmes on urban economic growth, development and urbanization 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. Fred Durr, *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	OpenCourse
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

Objective: This course is an open course which will be offered to only those students for whom Economics is not the core course. The purpose of this paper is to introduce a non- economics students to the subject matter of economics by familiarising with the most basic concepts of economics. Special attention is given to include concepts that are used in everyday life.

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',;OxfordUniversity 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 Reformsand 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 DictionaryofEconomics
7. The Penguin DictionaryofEconomics
8. The New Palgrave Dictionary of Economics(<http://www.dictionaryofeconomics.com/dictionary>)

Semester V

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

INDIAN FINANCIAL SYSTEM

Objective: The objective of this course is to help students to understand the conceptual framework of Indian financial Institutions and markets and their operations.

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 McGrawHill
5. Dr. Alice Mani: Indian Financial System,SBH.
6. L M Bhole: Financial Institutions and Markets, Tata McGrawHill

Semester V

Course Category	OpenCourse
Course Title and Code	Kerala Economy ECO5 D03
No. of Credits	3
No. of Contact Hours	3 Hours per week

KERALA ECONOMY

Module I: Kerala Economy-Human Resources

Economic History of Kerala – Demographic Features of Kerala – Occupational Distribution of Population – Migration- Social Infrastructural Development: Education and Health

Module II: Gross Domestic Product, Product and Unemployment

Trends in Gross State Domestic Product and per capita Income in Kerala – Sectoral Contribution to Gross State Domestic Product - Inequalities in the Distribution of Income and Wealth – Poverty in Kerala- Trends, Causes & Consequences – Unemployment in Kerala: Trends, Causes & Consequences – Poverty Alleviation & Employment Generation Programmes in Kerala - Kerala Model of Development|| with a Special Mention on Recent Sen- Bhagawati Debate

Module III: Agricultural Sector

Growth of Agriculture in Kerala Economy – Trends in Agricultural production and Productivity – Determinants of Agricultural Productivity – Cropping Pattern – Agrarian Structure and Land reforms – Irrigation: Sources and Trends - Food Security in Kerala.

Module IV: Industrial & Service sectors

Structure of Kerala Industry – Growth and Pattern of Industrial Development – Industrial policy of Kerala – Special Economic Zones (SEZ) – Role of Small Scale Industries in Kerala Economy – Problems & remedial Measures of Small Scale Industries: Issue of Sickness – Industrial Finance in Kerala – Service Sector: Infrastructure : Transport, Energy, Communication & I.T.

References

1. Centre for Development Studies, 1977, Poverty, Unemployment and Development Policy: A case study of selected issues with reference to Kerala, Orient Longman, Bombay.
2. B.A. Pakash (Ed) 2004, Kerala's Economic Development: Performance and Problems in the post liberalization period, Sage Publications, New Delhi.
3. B.N Ghosh & Patmaja D. Namboodiri, 2009 (Eds), The Economy of Kerala Yesterday, Today and Tomorrow, Serial Publications, New Delhi.
4. K.C. Zachariah, K.P. Kannan, S. Irudaya Rajan, 2002 (Ed). Kerala's Gulf Connections, C. D.S., Trivandrum.
5. Rajasenan, D. and Gerard De Groot (Ed) 2005, Kerala Economy: Trajectories, Challenges and Implications, CUST, Kochi.
6. Rajan, K, Kerala Economy, Serial Publishers, New Delhi.

COMPLEMENTARY COURSES

Introductory Economics

SEMESTER I/II

Course Category	Complementary Course
Course Title and Code	Introductory Economics I ECO1(2) C01
No. of Credits	4
No. of Contact Hours	6 Hours per week

INTRODUCTORY ECONOMICS I

Module I: Basics of Economics

Economics-Definitions- Importance of economics-relation with other social sciences- Basic Problems of an economy - Micro versus Macro

Module II: Demand and supply

Utility, utility function, marginal utility, law of diminishing marginal utility- demand, law of demand. Elasticity of demand-Cost, cost function, opportunity cost, variable cost, fixed cost, total cost, marginal cost, average cost, supply, supply function, supply curve, Elasticity of supply- Equilibrium price, market and its classification

Module III: Production and distribution

Factors of Production-Production function, types of production function (short run and long run), economies of scale- Distribution-Marginal productivity theory.

Module IV: National Income Concepts and Meaning

National Income-Meaning and Significance- Concepts of National Income- Importance of the estimation of national income-difficulties in estimation of national income.

Module V: Classical Vs Keynesian economics

Assumptions of Classical economists-Say's Law of Market, Full employment, wage-price flexibility -Keynesian revolution-major concepts of Keynes, Post-Keynesian developments (Brief introduction only).

References

1. Diwedi DN - Macroeconomics Theory and Policy, Tata McGraw Hill Education Pvt. Ltd, New Delhi,
2. Salvator D and EA Diulio – Principals of Economics Schuam's Outline Series
3. Salvator D – International Economics, Schuam's Outline Series
4. Gregory Mankiw, Principles of Macroeconomics
5. Sangita Vaishali Kapoor, (2017) Introductory Macro Economics,
6. Gregory Mankiw, Principles of Microeconomics
7. Pradeep Kumar Mehta and Meena Singh (2017), Introductory Microeconomics, Taxmann's Paperback.

8. Paul Samuelson and William D Nordhaus(2010), Economics, Tata McGraw Hill Education Pvt. Ltd, NewDelhi,

SEMESTERIV/III

Course Category	Complementary Course
Course Title and Code	Introductory Economics II ECO4(3) C01
No. of Credits	4
No. of Contact Hours	6 Hours per week

INTRODUCTORY ECONOMICS II

Module I: Money and Banking

Definitions and functions of money- demand for and supply of money- Fischer's quantity theory of money- inflation and deflation (Only concepts, Types and Causes)- Role and functions of commercial banks and Central Bank-monetary policy and its instruments.

Module II: Public Finance

Meaning and Significance- Public and private finance-Principle of Maximum Social Advantage- Public revenue- public expenditure-public debt- budget- Fiscal Policy-FRBM Act-Finance Commission- Terms of References and Recommendations of 14th and 15th Finance Commission.

Module III: Trade

Internal and External Trade-balance of trade and balance of payments-foreign exchange rate, devaluation- revaluation-depreciation-appreciation.

Module IV: India as a Developing Economy

Indian economy- growth and development under different policy regimes-Demographic trends and issues-education- health and malnutrition - Trends and policies on poverty; inequality and unemployment - Role of NITI Aayog.

References

1. Diwedi DN - Macroeconomics Theory and Policy|| TataMagrawhill
2. Salvator D and EA Diulio – Principals of Economics Schuam's OutlineSeries
3. Salvator D – International Economics, Schuam's OutlineSeries
4. Gregory Mankiw, Principles of Macroeconomics
5. Sangita Vaishali Kapoor, (2017) Introductory MacroEconomics,
6. Datt and AshwaniMahajan (2018), Indian Economy, S. Chand, NewDelhi
7. Uma Kapila, (2017), Indian Economy-Performance andPolicies,
8. Manoranjan Sharma (2017), Leading Issues in IndianEconomy
9. R. K. Lekhi and Joginder Singh, (2016) Public Finance, KalyaniPublishers
10. H.L. Bhatia, Public Finance (29th Edition), Vikas Publishing House, NewDelhi

CO-OPERATION

SEMESTER I/II

Course Category	Complementary Course
Course Title and Code	Co-operation - I ECO1(2) C02
No. of Credits	4
No. of Contact Hours	6 Hours per week

CO-OPERATION – I

Module I: Principles and Problems of Co-operation

Meaning and Significance of Co-operation; Co-operation and other business enterprises-Problems of Co-operation-Role of Co-operatives in a dynamic economy-Impact of demonetization on Co-operative banks-Vaidyanathan Committee Report

Module II: Practice of Co-operation in selected Foreign Countries

Co-operative Movements in Germany, England, Denmark, Ireland, Japan, Italy, France-International Co-operative Alliance.

Module III: Practice of Co-operation in India:

Origin and Development of Co-operative Movements in India-Co-operative Legislations and Administrations-Recent developments.

Module IV: Co-operative Banking

Principles and Policy-Rural Primary Agricultural Credit Societies, Central Co-operative Banks, State Co-operative Banks, Co-operative Agricultural and Rural Development Banks-Refinancing of Co-operative Banks- Role of NABARD and other agencies.

References

1. T.N. Hajila, Principles, Problems and Practices of Co-operation (ShivalalAgarwala&Co.,Agra).
2. E.S. Bogardus, PrinciplesofCo-operation.
3. K.R. Kulkarni, Theory & Practice of Co-operation in IndiaandAbroad.
4. G. Druhain, The Co-operative Society as a FormofEnterprise.
5. H. Calvert, Law & Principles ofCo-operation.
6. C.R. Ray, Co-operation at Home&Abroad.
7. R. Philips, Economic Nature ofCo-operativeAssociation.

SEMESTER IV/III

Course Category	Complementary Course
Course Title and Code	Co-operation II: ECO4(3) C02
No. of Credits	4
No. of Contact Hours	6 Hours per week

CO-OPERATION II

Module I: Agricultural Co-operatives:

Co-operative production-Co-operative Vs Collective Farming- Co-operative Supply (Service Co-operatives)- Co-operative Marketing- Co-operative Processing- Co-operative Storage and Warehousing.

Module II: Non-Agricultural Co-operatives:

Consumers' Co-operatives- Co-operative Housing- Urban Co-operative Credit Societies- Industrial Co-operatives-Workers' Co-operative-Dairy Co-operatives.

Module III: Human Resource Development in Co-operatives:

Nature and Significance of Human Resources Development in Co-operatives-Co-operative Education and Training.

Module IV: Role of Co-operatives in a Liberalised Financial situation.

History & Role of Co-operative Movement in Kerala - Co-operatives and SHGs – Kudumbasree in Kerala, co-operatives and decentralization

References

- 1.T.Nhajila, Principles, Problems and Practices of Co-operation(Shivalal Agarwala &Co.,Agra).
- 2.E.S. Bogardus, Principles of Co-operation.
- 3.K.R. Kulkarni, Theory & Practice of Co-operation in India and Abroad.
- 4.G. Druhain, The Co-operative Society as a Form of Enterprise.
5. H. Calvert, Law & Principles of Co-operation.
6. C.R. Ray, Co-operation at Home&Abroad.
7. R. Philips, Economic Nature of Co-operative Association.

BANKING

SEMESTER

I/II

BANKING-I

Preamble: Banking has a long history in the world. It has undergone profound changes in recent years especially after the far-reaching banking sector reforms in India and elsewhere. The present course is designed to acquaint the students with the working of banks and to familiarize them with the basic principles and concepts which are often used in banking literature.

Module I: Origin of Banking – Role and Importance of banks in Economic Development -Brief history of commercial banking in India – Structure of commercial banks – Functions – Credit creation, New banking entities in India – Payment banks and Small Finance Banks.

Module II: Commercial Banking-Branch Banking Vs Unit Banking-Group Banking- Chain Banking, Mixed Banking- Balance sheet- Rules of Management of funds-Assets and Liabilities- Bank Failures-Deposit Insurance- Nationalisation of Banks in India - An overview of Changes after Nationalization- Merger of banks and their problems.

Module III : Negotiable Instruments: Types -cheque, Crossing, Dishonouring of cheque, Draft, Bill of Exchange, promissory note. Money market. Money market instruments: Money at call and short notice, Inter-bank term money, Commercial paper, Certificate of Deposit, Treasury Bill.

Module IV: Electronic banking-Debit card, Credit card, Online banking, Mobile banking, UPI- Electronic Fund Transfer: NEFT, RTGS, IMPS.-Digital wallet-Core Banking, SWIFT, Cheque Truncation System- Electronic Clearing services

References

1. R.S. Sayers, Modern Banking. –Macmillan
2. M.D. Decock, Central Banking.
3. S.K. Basu, Banking in India.
4. Milnes Holdern, Studies in Practical Banking.
5. I.C. Dhingra, Indian Economy. Sulthan Chandandsons.
6. Rangarajan C. (1998), Indian Economy: Essays on Money and Finance, UBS Publishers and Distributors, New Delhi.
7. M.R. Baye, D.W. Jansen (1996), Money, Banking and Financial Markets, AITBS (Indianed.)

SEMESTER IV/III

Course Category	Complementary Course
Course Title and Code	Banking-II: ECO4(3) C03
No. of Credits	4
No. of Contact Hours	6 Hours per week

BANKING II

Module1: Rural banking in India: Agricultural banking, Co-operative banks, Three tierstructure, Regional Rural banks, Local Area banks, NABARD, Role and Functions ofNABARD

Module II: Banking Sector Reforms in India : Recommendations of Narasimham committee I & II, BIS, Basel Committee, Basel 1, 2 & 3 Accords, Capital adequacy norms, Non-Performing Asset, Prudential norms, Income recognition, Asset Classification and Provisioning.

Module III: Central Bank – meaning – Functions of Central Bank with reference to RBI – Rules of note issue system in India -Monetary policy of RBI – Bank rate, CRR, SLR & NLR, Open Market operations, LAF, Repo, Reverse repo and MSF rate.MCLR.

Module IV: Development banks – Need for development banks and their role – types of development banks and their present conditions in India; IFCI, SFCs, IDBI, SIDBI, Mudra Bank.

References

1. R.S. Sayers, Modern Banking. –Macmillon
2. M.D. Decock,CentralBanking.
3. S.K. Basu, Banking in India.
4. MilnesHoldern, Studies in PracticalBanking.
5. I.C. Dhingra, Indian Economy. Sulthan Chandandsons.

MATHEMATICAL TOOLS FOR ECONOMICS

SEMESTER I/II

Course Category	Complementary Course
Course Title and Code	Mathematical Tools for Economics-I, ECO1(2)C04
No. of Credits	4
No. of Contact Hours	6 Hours per week

MATHEMATICAL TOOLS FOR ECONOMICS-I

Preamble: The objective of the complimentary courses, viz., “Mathematical Toolsfor Economics" is to familiarize the students about the mathematical tools and techniques that are commonly used in economics. The purpose of the course, then, is to present mathematical skills and concepts, and to apply them to ideas that are important to the economics students. It is expected that this course will open up the much needed mathematical rigour in understanding economic theory and empirical analysis. It is also expected that this course will substantially contribute to improving the problem solving skills, numerical aptitude of students.

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: Theory of Sets

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

Module III: 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 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: Special Determinants and Matrices in Economics

The Jacobian-the Hessian- the discriminant- Higher order Hessian

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 Economists*, Prentice-Hall of India.
6. Geoff Renshaw, *Maths for economics*, 2nd edition, Oxford University Press.
7. Edward T. Dowling, *Introduction to Mathematical Economics (3rd Edition)*, Schaum's Outline Series, McGRAW-HILL.

Additional References:

1. Taro Yamane, *Mathematics for economists: an elementary survey*, Prentice Hall
2. John Livernois, et al., *Mathematics for Economics*, PHI Learning (2012)
3. Teresa Bradley, Paul Patton *Essential Mathematics for Economics and Business*, 2nd Edition, Wiley India Pvt. Ltd (2006)
4. Bhardwaj, *Mathematics for Economics and Business*, 2nd Edition, Excel Books
5. Olive, *Maths: A Self Study Guide*, 2nd Edition, Cambridge University Press India Pvt. Ltd
6. Carl P. Soman, Lawrence Blume, *Mathematics for Economists*, 1st Edition, Viva Books (2010)
7. David M. Levine et al., *Quantitative Techniques for Management*, 1/e, Pearson Education,

Note to faculty / examiner: 1. This course is a complementary of B.A. Economics programme. The students of this course may not have studied mathematics at higher secondary level. Hence questions may be confined to intermediary level. 2. Derivations and proofs not required. 3. For logarithms, trigonometric functions and natural logarithm are to be excluded. 4. For differentiation / integration trigonometric functions and logarithm are to be excluded.

SEMESTER IV/III

Course Category	Complementary Course
Course Title and Code	Mathematical Tools for Economics-II, ECO4(3) C04
No. of Credits	4
No. of Contact Hours	6 Hours per week

MATHEMATICAL TOOLS FOR ECONOMICS – II

Module I: The Derivative and Rules of Differentiation:

Limits-Continuity-The Derivative-Differentiability and Continuity-Derivative Notation-Rules of Differentiation-Higher-Order Derivatives- Implicit Differentiation

Module II .Uses of Derivative in Mathematics and Economics:

Total cost – average cost – marginal cost – relationship between MC and AC -Marginal utility, marginal revenue and marginal cost -Increasing and Decreasing Functions- Concavity and Convexity-Relative Extreme-Inflection Points-Curve Sketching-Optimization of Functions.

Module III: Calculus and Multivariable Functions:

Functions of Several Variables and Partial Derivatives - Rules of Partial Differentiation- Second-Order Partial Derivatives - Optimization of Multivariable Functions - Constrained Optimization with Lagrange Multipliers - Significance of the Lagrange Multiplier – Differentials - Concept of Total and Partial Differentials - Concept of Total Derivatives

Module IV : Application of Calculus of Multivariable Functions in Economics.

Marginal concepts – marginal productivity - Elasticity concepts – price/cross/income elasticity of demand - Optimisation of multivariable functions in economics – constrained optimisation (Hessian determinant not required)-Homogenous production function and returns to scale.

Module V: Integration

Basic concept of Integration-Rules of Integration-Initial condition- boundary condition-The Definite Integral - Integration by Substitution- integration by Parts--Area under curve. - Area between curves -Economic Applications

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. Geoff Renshaw, *Maths for economics*, 2nd edition, Oxford University Press.
7. Edward T. Dowling, *Introduction to Mathematical Economics* (3rd Edition), Schaum's Outline Series, McGRAW-HILL.

Additional References

1. Taroyamane, *Mathematics for economists: an elementary survey*, Prentice Hall
2. John Livernois, et.al., *Mathematics for Economics*, PHI Learning (2012)
3. Teresa Bradley, Paul Patton *Essential, Mathematics for Economics and Business*, 2nd Edition, Wiley India Pvt. Ltd (2006)
4. Bhardwaj, *Mathematics for Economics and Business*, 2nd Edition, Excel Books
5. Olive, *Maths: A Self Study Guide*, 2nd Edition, Cambridge University Press India Pvt Ltd
6. Carl P. Somon, Lawrence Blume, *Mathematics for Economists*, 1st Edition, Viva Books (2010)
7. David M. Levine et.al., *Quantitative Techniques for Management*, 1/e, Pearson Education,

Note to faculty / examiner: 1. This course is complementary of B.A. Economics course. The students of this course may not have studied mathematics at higher secondary level. Hence questions may be confined to intermediary level. 2. Derivations and proofs not required. 3. For logarithms, trigonometric functions and natural logarithm are to be excluded. 4. For differentiation / integration trigonometric functions and logarithm are to be excluded.

MODEL QUESTION PAPER (CORE COURSE)

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

Branch: Economics

Core Course: ECO1B01- Microeconomics I

Time:2.30Hours

Max.:80Marks

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. 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 cost 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.

(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, 7. Wealth, debt.
8. What is MPC?
9. What is value of multiplier if $MPC = 0.75$
10. What is balanced budget multiplier?
11. What is liquidity trap?
12. What determines the speculative demand for money?
13. Why does bond price fall when interest rate rises?
14. What is real interest rate?
15. What is fiscal policy?
16. Why are macroeconomic variables important for common people?

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.

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

Section C

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

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

MODEL QUESTION PAPER (COMPLEMENTARY COURSE)

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

Branch: Economics

Complementary Course: ECO1(2)C01- Introductory Economics 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. Scarcity definition of Economics
2. Production possibility curve
3. Explain supply function
4. Factors of production
5. Distinguish between GDP and GNP
6. Say's Law of Market
7. Giffen paradox
8. Assumptions of Classical economic model
9. Production function
10. Equilibrium price
11. Internal and external economies of production
12. Keynesian psychological law of consumption
13. Functional distribution
14. Division of labour
15. Utility function

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 the law of diminishing marginal utility
17. Explain the law of variable proportion
18. Distinguish between cardinal and ordinal utility
19. Explain the income elasticity of demand
20. What are the factors affecting shifts in supply curve
21. Explain scarcity and choice as the central economic problems
22. What are the different classifications of markets
23. Discuss the difficulties in measuring National Income in developing countries

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. Critically analyse the marginal productivity theory of distribution
26. Examine the basic problems of an economy. How it is solved in different economic systems.
27. Explain the different types of price elasticity of demand

MODEL QUESTION PAPER (COMPLEMENTARY COURSE)
First Semester BA Degree Examination, November
2019 (CBCSS-UG)
Branch: Economics
Complementary Course: Co-
operation - I
ECO1(2) C02

Time:2.30Hours

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 co-operation
2. The Brahm Parkash Committee
3. What is direct financing?
4. Define Cooperative federation
5. Discuss the importance of cooperation
6. Briefly explain farmers service society
7. Objectives of CONSUMER FED
8. National cooperative bank
9. Define service cooperative society
10. Objectives of Primary agriculture credit society
11. Mention two important cooperative legislation in India
12. Explain the benefits of cooperation
13. Cooperative commonwealth
14. Rural Development bank

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.

15. Explain the features of cooperation
16. Discuss the working of state cooperative bank
17. Discuss the role of cooperatives in Germany
18. Briefly explain cooperative movement in Britain.
19. Explain the features of International Co-operative Alliance.
20. What are redefined principles of cooperation
21. Discuss the consumer cooperative movement in Japan
22. Discuss the recommendations of the Vaidyanathan Committee

Section C

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

23. Discuss the role of cooperatives in a dynamic economy.
24. Explain the functions of NABARD
25. Examine the impact of demonetization on Co-operative banks.
26. Explain the cooperative credit structure in India.

MODEL QUESTION PAPER (COMPLEMENTARY COURSE)

First Semester BA Degree Examination, November

2019 (CBCSS-UG)

Branch: Economics

Complementary Course: Banking

- I Banking-I, ,

ECO1(2) C03

Time:2.30Hours

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. Definebank
2. Define mixedbanking
3. Define call moneymarket
4. NEFT
5. Define interbank termmoney
6. Chequecrossing
7. ATM
8. Treasurybill
9. DefineUPI
10. What isdraft?
11. Define Unitbanking
12. What is truncatedcheque?
13. Define epurse
14. Corebanking

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.

15. Explain Primary functions of commercialbanks
16. Discuss Bank nationalization and its impact on IndianEconomy
17. Explain the features of Treasurybill
18. Briefly explain credit creation by banks
19. Explain Chain banking and Group banking
20. What are Commercial Papers and Certificate ofdeposit?
21. Discuss about Bank Failures
22. Discuss about new private sector commercial banks inIndia

Section C

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

23. Discuss the recent trends in Indian bankingsector.
24. Briefly explain different types of NegotiableInstruments.
25. Examine the Role and Importance of banks in EconomicDevelopment.
26. Explain the structure of money market inIndia.

Model Question

Paper Semester-1

Complementary Course: Mathematics for Economic Analysis-1 Time:
2.30Hours

Max.:80Marks

Mathematical Tools for Economics-I ECO1(2)C04

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. Define even and odd functions
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. Let $A = \{1, 3, 5, 8\}$ and $B = \{1, a, 3\}$. Find $A \times B$ and $B \times A$.
9. Define diagonal matrix. Give an example.
10. Differentiate symmetric and skew symmetric matrix.
11. Define the Jacobian of a function.
12. Find the determinant of the matrix
 $P = \begin{bmatrix} 1 & 6 & -1 \\ 2 & 3 & 3 \\ 3 & -3 & -2 \end{bmatrix}$
13. Define adjoint of a matrix
14. Define cofactor of a matrix

Section B

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

15. 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.
16. Solve $\frac{x}{7} + \frac{8}{y} = 2$ and $\frac{2}{x} - \frac{12}{y} = 20$
17. Find the equilibrium price and quantity for the demand and supply
 $x = 64 - 8y - y^2$; $x = 10y + 5y^2$.
18. 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) $A \cap (B \cap C)^c$.

19. If $A = \begin{bmatrix} 2 & 2 & 4 \\ 0 & 0 & 2 \end{bmatrix}$

show that $A^2 - 3A + 2I = 0$



20. Find the rank of the

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

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

22. Use the Jacobian to test for functional dependence in the following system of equations:
 $y_1 = 6x_1 + 4x_2$
 $y = 7x_1 + 9x_2$

Section C

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

23. 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 $p - 2Q^2 + 3Q + 71 = 0$.
24. (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.
25. Use Cramm's rule to solve the system of equations:
 $2x + y + 3z = 15$
 $x - 2y + 5z = 13$
 $4x + 3y - z = 11$
26. (a) Discuss the properties of determinants.
 (b) Using matrix inverse method, solve the system of equations $4x_1 + x_2 - 5x_3 = 0$
 $-2x_1 + 3x_2 + x_3 = -12$
 $3x_1 - x_2 + 4x_3 = 5$