DAV University, Jalandhar

Department of Commerce Business Management & Economics

Scheme and Syllabi

for

Bachelor of Science (Economics)
Honours/ Honours with Research

(As per NEP-2020)

Batch-2023 & onwards

Introduction of the Programme

The B.Sc. (Economics) Honours programme has been designed to provide a cutting-edge expertise in mainstream economics with minor (Econometrics). The programme aims to develop analytical, creative and critical thinking skills for problem solving and decision making. It aims at better understanding of social, economic and political issues and also explores the full spectrum of finance. The transferable skills attained through the B.Sc. (Economics) Honours are highly sought after by employers and increase the employability quotient of students in various dynamic fields. A student could be an economist, a government advisor, financial consultant, econometrician, banker and also look forward to different government positions after successful completion of the programme. Keeping in view the new NEP, the programme is multidisciplinary in nature and integrates different fields like Finance, Mathematics, Statistics, Operations Research, industrial sector, agriculture sector, Environmental Studies, Model Building with an inbuilt local as well as global perspective. New elements such as internship, case studies, seminars and research projects enhance deeper understanding of the practical applications of the programme. So, join in to embark on a whole new adventure with us. The Bachelor's degree Honours programme in Economics is a full-time undergraduate programme of 4 years that aims at providing a programme structure which would retain the 'traditional' in the programme and equip the students with business acumen necessary to succeed in the professional world. On completion of B.Sc. (Economics) Honours at DAV University, students will acquire comprehensive knowledge of how the economic principles are applied in the society, family, government and private sector, business, and science.

Program Educational Objectives (PEOs)

PEO1- Develop the ability to explain core economics terms, concepts and theories.

PEO2- To gain an understanding of core economic principles and how they apply to a wide range of real world issues.

PEO3- To identify the key macro-economic indicators and measures of economic changes, growth and development.

Program Outcomes (POs)

PO1: Critical Thinking: Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.

PO2: Effective Communication: Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.

PO3: Social Interaction: Elicit views of others, mediate disagreements and help reach conclusions in group settings.

PO4: Effective Citizenship: Demonstrate empathetic social concern and equity centred national development, and the ability to act with an informed awareness of issues and participate in civic life

through volunteering.

PO5: Ethics: Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.

PO6: Environment and Sustainability: Understand the issues of environmental contexts and sustainable development.

PO7: Self-directed and Life-long Learning: Acquire the ability to engage in independent and life-long learning in the broadest context socio-technological changes

Program Specific Outcomes (PSO's)

PSO1- To enable experiential learning through Major and interdisciplinary curricula that will nurture ethical and responsible global citizens of the future.
PSO2- To rigorously train the students to apply their analytical abilities in order to recognise and solve problems of business and society, locally, regionally and globally.
PSO3- To equip students with the requisite skills to undertake a research-oriented approach to problem solving and enhance the existing body of knowledge globally.

Mapping of PEO with POs

PEOs / Pos	PEO 1	PEO 2	PEO 3
PO1	Yes	Yes	Yes
PO2		Yes	Yes
PO3	Yes	Yes	
PO4			Yes
PO5	Yes		Yes
PO6	Yes		
PO7	Yes	Yes	Yes

Mapping of PEO with PSO

PEOs / PSOs	PEO 1	PEO 2	PEO 3
PSO1	Yes	Yes	
PSO2	Yes	Yes	Yes
PSO3	Yes		Yes

Scheme of Courses- Bachelor of

Science (Economics) Honours/ Honours with Research

Credit Details			
S.No.	**Course Category**	**Course Category Abbreviation**	**3-Yr B.Com/… (Credits)**
1.1	Discipline Specific Courses-Core	DSC	61
1.2	Discipline Specific-Skill Enhancement Courses-Core	DS-SEC	-
1.3	Discipline Specific-Value Added Courses-Core	DS-VAC	-
Total of Discipline Specific Core Courses			
2.1	Minor Courses	MC	24
OR			
2.2	Interdisciplinary Courses	IDC	-
3	Multidisciplinary Courses	MDC	9
4	Ability Enhancement Course- Common	AEC-C	8
5	Value Added Courses-Common	VAC-C	6
6.1	Skill Enhancement Courses- Common	SEC-C	10
6.2	Skill Enhancement Courses-Summer Internship	SEC-SI	2
Total of Skill Enhancement Courses			
Total Credits			**120**

Scheme of Courses- Bachelor of

Science (Economics) Honours/ Honours with Research

Credit Details				
S.No.	**Course Category**	**Course Category Abbreviation**	**4-Yr B.Com (Hons.)/.. (Credits)**	**4-Yr B.Com (Hons/.. (Hons. with Res.) (Credits)**
1.1	Discipline Specific Courses-Core	DSC	85	81
1.2	Discipline Specific-Skill Enhancement Courses-Core	DS-SEC	-	-
1.3	Discipline Specific-Value Added Courses-Core	DS-VAC	-	-
	Total of Discipline Specific Core Courses			
2.1	Minor Courses	MC	40	32
OR				
2.2	Interdisciplinary Courses	IDC	-	-
3	Multidisciplinary Courses	MDC	9	9
4	Ability Enhancement Course- Common	AEC-C	8	8
5	Value Added Courses-Common	VAC-C	6	6
6.1	Skill Enhancement Courses- Common	SEC-C	10	10
6.2	Skill Enhancement Courses-Summer Internship	SEC-SI	2	2
6.3	Skill Enhancement Courses- Research Project/Dissertation	SEC-RP	-	12
Total of Skill Enhancement Courses				
Total Credits			**160**	**160**

Semester 1

S.No	Paper Code	Course Title	L	T	P	Cr	Course Type
1	ECN103	Microeconomics-1	4	0	0	4	DSC
2	ECN104	Macroeconomics-1	4	0	0	4	DSC
3		Multi-disciplinary Elective	-	-	-	3	MDC
4		Skill Enhancement-Elective	-	-	-	2	SEC-C
5		Skill Enhancement-Elective	-	-	-	2	SEC-C
6		Value Added Courses	-	-	-	3	VAC-C
7		Ability Enhancement Elective	-	-	-	2	AEC-C
						20	

Note:

1. *Student is required to opt for skill enhancement course of two credits from the relative basket.*
2. *Student is required to opt for Multi-Disciplinary Course of three credits from the relative basket.*

Semester 2

S.No	Paper Code	Course Title	L	T	P	Cr	Course Type
1	ECN105	Microeconomics-II	4	0	0	4	DSC
2	ECN106	Macroeconomics-II	4	1	0	5	DSC
3		Multi-Disciplinary Elective	-	-	-	3	MDC
4		Ability Enhancement Elective	-	-	-	2	AEC-C
5		Skill Enhancement-Elective	-	-	-	3	SEC-C
6		Value added course	-	-	-	3	VAC-C
						20	

Note:

Student is required to opt for skill enhancement course of two credits other than opted in previous semester/s from the relative basket.

Student is required to opt Multi-Disciplinary Course of three credits other than opted in previous semester/s from the relative basket

First Exit:

Option 1: Industry Engagement program for 4-6weeks (with minimum 120 hours)

Option 2: Apprenticeship with NSSO for 4-6 weeks (with minimum 120 hours)

The student will be awarded "Undergraduate Certification in Economics" after exit at this point.

Semester 3

S.No	Paper Code	Course Title	L	T	P	Cr	Course Type
1	ECN201	Microeconomics-III	4	0	0	4	DSC
2	ECN202	Macroeconomics-III	4	0	0	4	DSC
3	ECN251	Statistics-I	4	0	0	4	MD
4		Multi-Disciplinary Elective	-	-	-	3	MDC
5		Ability Enhancement-Elective	-	-	-	2	AEC-C
6		Skill Enhancement-Elective	-	-	-	3	SEC-C
						20	

Note:

1. *Student is required to opt for skill enhancement course of two credits other than opted in previous semester/s from the relative basket.*
2. *Student is required to opt for ability enhancement course of two credits other than opted in previous semester/s from the relative basket*
3. *Student is required to opt Multi-Disciplinary Course of three credits other than opted in previous semester/s from the relative basket*

Semester 4

S.No	Paper Code	Course Title	L	T	P	Cr	Course Type
1	ECN203	Development Economics	4	0	0	4	DSC
2	ECN204	Regional Economics with special reference to Punjab Economy	4	0	0	4	DSC
3	ECN205	Money and Banking	4	0	0	4	DSC
		Ability Enhancement-Elective	-	-	-	2	AEC-C
4	ECN252	Statistics-II	4	0	0	4	MD
5	ECN253	Mathematics for Economists-1	4	0	0	4	MD
						22	

Note:

1. *Student is required to opt for ability enhancement course of two credits other than opted in previous semester/s from the relative basket*

Second Exit:
Option 1: Industry Engagement program for 4-6 weeks (with minimum 120 hours)
Option 2: Apprenticeship for 4-6 weeks (with minimum 120 hours)

The student will be awarded "Undergraduate Diploma in Economics" after exit at this point.

Semester 5

S.No	Paper Code	Course Title	L	T	P	Cr	Course Type
1	ECN301	Agricultural Economics	4	0	0	4	DSC
2	ECN302	Indian Economy	4	0	0	4	DSC
3	ECN350	Internship	0	0	0	2	SEC-SI
4	ECN351	Statistics- III	4	0	0	4	MD
5	ECN352	Mathematics for Economists-II	4	0	0	4	MD
						18	

Semester 6

S.No	Paper Code	Course Title	L	T	P	Cr	Course Type
1	ECN303	Public Finance	4	0	0	4	DSC
2	ECN304	International Economics	4	0	0	4	DSC
3	ECN305	Economics of Health and Education				4	DSC
4	ECN306	Environmental Economics	4	0	0	4	DSC
5	ECN353	Mathematics For Economists-III	4	0	0	4	MD
						20	

Note

The student will be awarded "Bachelor's Degree in B.Sc. Economics" after completion.

Semester 7 (With Research)

S. No	Paper Code	Course Title	L	T	P	Cr	Course Type
1	ECN401	Industrial Economics	4	0	0	4	DSC
2	ECN402	Labor economics	4	0	0	4	DSC
3	ECN403	Research Methodology	4	0	0	4	DSC
4	ECN451	Research Project-1 (Synopsis)	0	0	0	3	SEC-RP
5	ECN452	Basic Econometrics	4	0	0	4	MD
						19	

Semester 8

S.No	Paper Code	Course Title	L	T	P	Cr	Course Type
1	ECN405	Global Political Economy	4	0	0	4	DSC
2	ECN406	Advanced Global Trade Challenges and Opportunities	4	0	0	4	DSC
3	ECN453	Research Project-II (Dissertation)	0	0	0	9	SEC-RP
4	ECN454	Advanced Econometrics	4	0	0	4	MD
						21	

Note:

1. *Student is required to opt for value added course of two credits other than opted in previous semester/s from the relative basket.*

The student will be awarded "Bachelor's Degree (Honours with Research) in Economics" after completion.

Semester 7 (without Research)

S.No	Paper Code	Course Title	L	T	P	Cr	Course Type
1	ECN401	Industrial Economics	4	0	0	4	DSC
2	ECN402	Labor economics	4	0	0	4	DSC
3	ECN407	History of Economics Thoughts	4	0	0	4	DSC
4	ECN452	Basic Econometrics	4	0	0	4	MD
5	ECN455	Operational research	2	0	4	4	MD
						20	

Semester 8

S.No	Paper Code	Course Title	L	T	P	Cr	Course Type
1	ECN405	Global Political Economy	4	0	0	4	DSC
2	ECN406	Advanced Global Trade Challenges and Opportunities	4	0	0	4	DSC
3	ECN408	Financial Economics	4	0	0	4	DSC
4	ECN454	Advanced Econometrics	4	0	0	4	MD
5	ECN456	Data Analysis	2	0	4	4	MD
						20	

Note:

The student will be awarded "Bachelor's Degree (Honours) in Economics" after completion.

Course Code	Ability-Enhancement Courses	Cr.	Course Code	Skill-Enhancement Courses	Cr.	Course Code	Value-Added Courses	Cr.
	Personality Enhancement	1L+1P	MGN 101S	Essentials of Entrepreneurship-Thinking and Action	2L+1P	EVS104	Environmental Studies **(Mandatory)**	2L+1P
	Personality Development	2P	MED 104	Design Thinking	2P	HVE 101	Human Values and Ethics **(Mandatory)**	2L+1T
	Behavioural& Life Skills	1L+1P	MGN 102S	Design Thinking & Innovation	2L		Gender Sensitization	2L
	Global Citizenship in Higher Education	2L		Data Analytics	2L+1P		Professional Ethics	2L
	Communication Skills **(Mandatory)**	1L+1P	CST192	Cyber Security	3 (2L+1P)		Sustainable Development	2L
	Health & Yoga	1L+1P	CST191	Digital Fluency	1L+1P		Green Technologies	2L
	Technical Report Writing	2L	CST194	Fundamentals of Computer programming & IT(FCPIT)	2L		General Studies	2L
	Leadership Management	2L		Python Programming	3 (2L+1P)		NSS	2 (1L+1P)
	Therapeutic Yoga	1L+1P	CED 100	Disaster Preparedness and Planning	2L			
	Creative & Critical Thinking	1L+1P		Intellectual Property Rights	2L			
	Community Engagement & Social Responsibility **(Mandatory)**	1L+1P	ZOL 192	Apiculture	2P			
				NCC*	3 (2L+1P)			

Multidisciplinary Studies

Course Code	Course Name	Faculty/Department
PHS150	Basics of Physics	Physics
	Basics of Chemistry	Chemistry
ZOL194	Basics of Biology	Zoology & Botany
	Introductory Biotechnology	Biotechnology
	Introductory Microbiology	Microbiology
	Functioning of the Human Body	Zoology
	Introductory Botany	Botany
MGN101M	Business Management for Beginners	CBME
MGN102M	Fundamental of Mutual Funds	CBME
ECN101M	Economics for Beginners	CBME
	Professional Communication	English
EDU199	Fine Arts	Arts, Fine Arts & Performing Arts
	Jyotish: 'Eye of the Veda'	Vedic Studies
	Mathematical Statistics	Mathematics
	Introductory Journalism	JMC
MCJ151	Professional Photography	JMC
	Library Information Sciences	Library Sciences

L	T	P	Credits
4	0	0	4

Course Code	ECN103							
Course Title	Microeconomics – I							
Course Outcomes	CO1: The course introduces the students to the first course in economics from the perspective of individual decision making as consumers and producers. CO2: The students learn some basic principles of microeconomics, interactions of supply and demand, and characteristics of perfect and imperfect markets. CO3: The student will learn about production function and producer equilibrium. CO4: students will understand the fundamentals of cost and revenue concepts.							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1								
•	Introduction to Economics: Meaning, Definition, Scope, Importance and Basic problems of an economy.							CO1
•	Demand and Supply functions, Market Equilibrium, Shift in market equilibrium due to change in demand and supply.							CO1
•	Elasticity of demand: Methods of calculating price, income, and cross elasticities; Degrees and their interpretation, relationship among various types of elasticities.							CO1
•	Elasticity of Supply: Meaning and Method of calculating elasticity of Supply. Degrees and their interpretation.							CO1
Unit 2								
•	Consumer Choice: Cardinal theory: Law of Diminishing Marginal Utility and Law of Equi Marginal utility.							CO2
•	Ordinal theory: Budget sets, Indifference curves: Meaning and properties, marginal rate of substitution.							CO2

•	Consumer equilibrium; effects of change in prices and income; Income and substitution effects: Hicksian approach.	CO2
Unit 3		
•	Theory of production: Production function, isoquants, properties of isoquants, iso-cost lines, optimum input combination.	CO3
•	Producer's Equilibrium, Expansion Path, Principle of marginal rate of technical substitution.	CO3
•	Law of variable proportions and Law of returns to scale.	CO3
Unit 4		
•	Theory of Cost: concept of economic cost; Short run and long run cost curves; increasing and decreasing cost industries; envelope curve.	CO4
•	Traditional cost theory v/s Modern cost theory	CO4
•	Revenue analysis: concept of total revenue, marginal revenue and average revenue & their relationships	CO4
Text Books	1. Bernheim, B. D., M. Whinston and A. Sen. *Microeconomics*. Tata McGraw-Hill Education. 2. Koutsoyiannis, A. *Modern Microeconomics.* Palgrave Macmilian, Second Edition, 2003 *3.* Lipsey*, G.* and K.A. Chrysal*. Economics.* Oxford University Press. 2004. 4. Mankiw, N.Gregory. *Principles of Economics.* Worth Publishers. 2007. Seventh Edition. 5. Salvatore, D. *Microeconomics: Theory and Applications.* Oxford University Press. 2008 Samuelson, P.A. and W. D. Nordhaus*. Economics.* Tata McGraw Hill. 2005	

L	T	P	Credits
4	0	0	4

Course Code	ECN104							
Course Title	Macroeconomics – I							
Course Outcomes	CO1: To understand the concept of national income and different methods of measuring it. CO2: To summarize the contributions made by the classical economists in macroeconomics. CO3: To summarize the contributions made by the Keynesian economists in macroeconomics. CO4: To understand the concept of money and the factors contributing demand for money							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1	Introduction to Macroeconomics							
•	Meaning, Nature and scope, importance, Micro vs. Macroeconomics, and its limitations.							CO1
•	Variables: Real and nominal; Induced and autonomous; Lagged and un-lagged; ex-ante andex- post;							CO1
•	Model and Equations; Equality & identity; stock and flow; Static, Equilibrium and Disequilibrium.							CO1
Unit 2	National Income							
•	Definition: Economic and Non- Economic Production: Productive Vs Non-productive,intermediate, and final output;							CO2
•	Concepts of national income. Measurement of National Income: National income: Concepts, components and methods of measurement; Income, Output and Expenditure methods,Difficulties in national income measurement. Nominal and Real GNP.							CO2
•	Circular flow of income in two, three and four sectors' economies;							CO2

Unit 3		
•	National Accounts: Meaning, objectives and importance. Different methods of preparing national income accounts; Social Income Accounts, Fund Flow Accounting, Balance of Payment method and Input Outputmethod.	CO3
•	GNP and Welfare; Inter temporal and international comparisons of National income.	CO3
Unit 4	Determination of Income and Employment:	
•	Classical View: Labour Market; Product Market and MoneyMarket.	CO4
•	Say's Law of Markets (Barter and a monetized economy).	CO4
•	Classical theory of income, output and incomedetermination.	CO4
Text Books	1. Beckerman, W. *An introduction to National Income Analysis,* London, E.L.B.S. 1976. 2. Studenski, Paul,A. *The Income of Nations part 2, Theory and Methodology,* New York UniversityPress, 1958. 3. Ackley, G. *Macro Economics: Theory and Policy*. Macmillan publishers. 1978. 4. Branson, William H. *Macro-Economic Theory and Policy.* Indian edition. 5. Dornbush, R., S. Fisher and R. Startz. Macro Economics. Tata Mc. Graw Hill. 2004. 6. Rana, K.C. and K.N. Verma. *Macro-Economic Analysis*. Vishal Publishing Co. 2014. 7. Shapiro, Edward. *Macroeconomic Analysis*. Galgotia Publications. 1999. Indian edition.	

L	T	P	Credits
4	0	0	4

Course Code	ECN105							
Course Title	Microeconomics – II							
Course Outcomes	CO1: To inculcate knowledge of perfect competition and monopoly. CO2: To inculcate knowledge of monopolistic competition. CO3: Students will learn the concepts of oligopoly and price discrimination. CO4: Enable students about the game theories in microeconomics.							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1								CO1
•	Perfect competition: its features, price determination, equilibrium of firm and industry in market period, short run and long run; Shut down point, short period and long period supply curves.							CO1
•	Monopoly: Meaning, Assumptions, equilibrium of the monopolist in short and long run, monopolypower, supply curve.							CO1
•	Price discrimination: meaning, degrees, conditions and equilibrium in discriminating monopoly, monopoly control and regulation.							CO1
Unit 2								CO2
•	Monopolistic competition: meaning, assumptions, product differentiation and demand curve, firm and group equilibrium;							CO2
•	Selling costs, excess capacity, Dumping.							CO2
•	Price determination under monopsony and bilateral monopoly.							CO2

Unit 3		CO3
•	Oligopoly: meaning, features, causes for the existence of oligopoly, approaches to the determination of price and output under oligopoly	CO3
•	Non-Collusive Oligopoly: Cournot, Bertrand, and Kinked demand curve model.	CO3
•	Collusive Oligopoly: Cartels and price leadership models.	CO3
Unit 4		CO4
•	Game Theory: basic concepts; Prisoner's Dilemma; competitive strategy: dominant strategies and Nash Equilibrium.	CO4
•	Concepts of expected value and uncertainty, markets with asymmetric information-adverse selection, moral hazards, agency problems	CO4
Text Books	1. Bernheim, B. D., M. Whinston and A. Sen. *Microeconomics*. Tata McGraw-Hill Education. 2. Koutsoyiannis, A. *Modern Microeconomics.* Palgrave Macmilian, Second Edition, 2003. *3.* Lipsey*, G.* and K.A. Chrysal. *Economics.* Oxford University Press. 2004. 4. Mankiw, N.Gregory. *Principles of Economics.* Worth Publishers. 2007. Seventh Edition. 5. Salvatore, D. *Microeconomics: Theory and Applications.* Oxford University Press. 2008 *6.* Henderson & Quant *Microeconomic Theory, A Mathematical Approach.* *7.* Samuelson, P.A. and W.D. Nordhaus. *Economics.* Tata McGraw Hill. 2005.	

L	T	P	Credits
4	1	0	5

Course Code	ECN106							
Course Title	Macroeconomics – II							
Course Outcomes	CO1: To assimilate the notion of Aggregate demand and Aggregate supply in the Economy CO2: To understand the concept and theories of consumption function and investment CO3: Students will learn the working of multiplier and its effects. CO4: To strengthen the awareness about the basic economic issues like inflation, unemployment and trade cycle.							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1								CO1
•	Basic Concepts: Full employment and various types of unemployment.							CO1
•	Aggregate demand and aggregate supply functions.							CO1
•	Effective demand: Determinants of effective demand, determination of effective demand, importance of effective demand.							CO1
Unit 2								CO2
•	Keynesian Economics: Keynes consumption function; saving and investment functions.							CO2
•	Psychological law of consumption							CO2
•	Determination of income, employment, and output in Keynesian frame work in a two sector, three sector and four sector economy. Paradox of thrift.							CO2
Unit 3								CO3

•	Multiplier: Static and Dynamic analysis. Balanced – budget multiplier. Foreign trade multiplier.	CO3
•	Theories of Consumption: Absolute Income Hypothesis; Relative Income Hypothesis; Permanent Income Hypothesis.	CO3
Unit 4		CO4
•	The Marginal Efficiency of Investment, Relationship between the MEC and MEI, Factor affecting inducement to investment;	CO4
•	Classical theory of investment; Keynesian theory of investment; Acceleratortheory of investment.	CO4
Text Books	1. Ackley, G. *Macro Economics Theory and Policy*. Macmillan publishers. 1978. 2. Branson, William H. *Macro-Economic Theory and Policy.* Indian edition. 3. Dornbush, R., S. Fisher and R. Startz. *Macro Economics*. Tata McGraw Hill. 2004. 4. Rana, K.C. and K.N. Verma. *Macro-Economic Analysis*. Vishal Publishing Co. 2014. 5. Shapiro, Edward. *Macroeconomic Analysis*. Galgotia Publications. 1999. Indian edition.	

L	T	P	Credits
4	0	0	4

Course Code	ECN201							
Course Title	Microeconomics – III							
Course Outcomes	CO1: Students will get knowledge about factor pricing and understand the theories of rent determination. CO2: Students will able to get knowledge about wages, interest, profit and their determination. CO3: Enable students to now about Edgeworth box and Walras Law. CO4: Students will learn welfare economics concepts and importance.							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1								CO1
•	Factor Pricing: Marginal productivity theory of distribution and determination of factor prices under different market forms;							CO1
•	Economic Rent: concepts (such as quasi rent etc.) and theories of rent determination - Ricardian and Modern theory.							CO1
Unit 2								CO2
•	Wages and its determination.							CO2
•	Interest: Classical and Loanable fund theory							CO2
•	Determination of profit and theories of profit.							CO2
Unit 3								CO3
•	Edgeworth box: 2 good, 2 factor, 2 consumer analysis and Pareto optimality conditions							CO3

•	Walras Law; Equilibrium and efficiency	CO3
•	Grand Utility possibility frontier.	CO3
Unit 4		CO4
•	Welfare Economics: Concepts, Compensation Principle (Kaldor-Hicks)	CO4
•	Social Welfare Function	CO4
•	Theory of Second best, Arrow' s Impossibility.	CO4
Text Books	1. Bernheim, B. D., M. Whinston and A. Sen. *Microeconomics*. Tata McGraw-Hill Education. 2. Koutsoyiannis, A. *Modern Microeconomics.* Palgrave Macmilian, Second Edition, 2003 *3.* Lipsey*, G.* and K.A. Chrysal. *Economics.* Oxford University Press. 2004. 4. Mankiw, N.Gregory. *Principles of Economics.* Worth Publishers. 2007. Seventh Edition. 5. Salvatore, D. *Microeconomics: Theory and Applications.* Oxford University Press. 2008 *6.* Samuelson, P.A. and W.D. Nordhaus. *Economics.* Tata McGraw Hill. 2005.	

L	T	P	Credits
4	0	0	4

Course Code	ECN202							
Course Title	Macroeconomics – III							
Course Outcomes	CO1: Develop an understanding about the equilibrium in product and money markets. CO2: Understand different trade cycles theories and inflation theories. CO3: Students will understand the Open Economy models. CO4: Students will learn the importance of monetary and fiscal policy.							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1								CO1
•	Equilibrium in product and money markets: IS and LM functions, changes in IS and LM functions.							CO1
•	ISLM General equilibrium- changes in general equilibrium							CO1
•	Elasticity of IS and LM functions and monetary and fiscal policies.							CO1
Unit 2								CO2
•	Trade Cycles: Features, Keynes' view on trade cycle, Schumpeter, Kaldor Samuelson, Hicks models,control of trade cycle.							CO2
•	Inflation: Causes, consequences and cures, theories of inflation: Classical, Keynesian, Modern theory of Inflation (demand Pull and Cost push inflation)							CO2
•	Inflation – unemployment trade off.Natural rate of unemployment.							CO2

Unit 3		CO3
•	Open Economy models: Short run open economy model, nominal exchange rate and real exchange rate	CO3
•	Mundell-Fleming model and exchange rate determination, purchasing power parity.	CO3
Unit 4		CO4
•	Monetary Policy: Instruments, objectives and effectiveness in recession and boom.	CO4
•	Fiscal Policy: Instruments and full employment; budget surplus; problems of stabilization policy.	CO4
•	Recent Developments in Macro Economics	CO4
Text Books	1. Ackley, G. *Macro Economics Theory and Policy*. Macmillan publishers. 1978. 2. Branson, William H. *Macro-Economic Theory and Policy.* Indian edition. 3. Dornbush, R., S. Fisher and R. Startz. *Macro Economics*. Tata McGraw Hill. 2004. 4. Rana, K.C. and K.N. Verma. *Macro-Economic Analysis*. Vishal Publishing Co. 2014. 5. Shapiro, Edward. *Macroeconomic Analysis*. Galgotia Publications. 1999. Indian edition.	

L	T	P	Credits
4	0	0	4

Course Code	ECN251							
Course Title	Statistics – I							
Course Outcomes	CO1: To study the tabular and graphical presentation of the data CO2: To understand the measures of Central Tendency Dispersion in order to interpret empirical data CO3: To study the index number and its impact on consumer cost of living index. CO4: To understand the concept of correlation and regression analysis.							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1								CO1
•	Definition: Scope, Importance and limitation of statistics.							CO1
•	Classification and Tabulation of data: discrete and continuous one – way and two – way frequency distribution.							CO1
•	Diagrammatic and graphic presentation of Data.							CO1
Unit 2								CO2
•	Measures of Central Tendency; Mean, Median, Mode, GM and HM, properties, merits and demerits.							CO2
•	Measure of Dispersion: Absolute and Relative measures of dispersion-Range, Quartile Deviation, MeanDeviation, Standard Deviation and Variance.							CO2
Unit 3								CO3
•	Correlation: meaning, Types, importance, Methods to measure – Scatter Diagram, Karl Pearson's productmoment and spearman's rank correlation.							CO3

•	Regression: Meaning, simple regression, least squares principle, properties of correlation and regressioncoefficients.	CO3
Unit 4	Index Numbers: Meaning scope and limitation of index numbers, problems in construction of index numbers.	CO4
•	Tests of Index numbers (time reversal and factor reversal tests), Weighted price and quantity index numbers using aggregate method: Laspeyre's, Paasche's, Fisher's Formulae, cost of living index numbers.	CO4
•	Tests for the consistency of index numbers. Use the index numbers to various fields.	CO4
Text Books	1. Nagar A.L. and R.K. Das. *Basic Statistics*. Oxford University Press. 1976 2. Gupta, S.C. *Fundamentals of Statistics*. Himalaya Publishing House. New Delhi. 2013. 3. Gupta, S.P. *Statistical Methods.* Sultan Chand and Sons. New Delhi. 2012. 4. Gupta C.B. *An Introduction to Statistical Methods*. Vikas Publishing House. New Delhi. 2009. 5. Spiegel, M.R. *Theory &Problems of Statistics*. McGraw Hill. 2009.	

L	T	P	Credits
4	0	0	4

Course Code	ECN203							
Course Title	Development Economics							
Course Outcomes	CO1- To enable students to understand the basic concepts of Economic Growth and Development CO2- To examine the different tools for measuring economic growth and development. CO3- To impart knowledge about theoretical framework of Growth and Development under different Schools of economic thought. CO4- students will understand the concept of capital formation and importance of foreign aid.							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1								CO1
•	Economic Development: Meaning and its evolution, Sustainable development goals.							CO1
•	Growth vs. Development- significance, objectives and core values. Characteristics of Development.							CO1
•	Indicators of Development: GDP as measure of welfare, Social and Economic indicators, Physical QualityLife Index, Human Development Index.							CO1
Unit 2								CO2
•	Strategies of Development: Theory of Balanced and Unbalanced Growth, Theory of Big Push, Critical Minimum Effort Thesis.							CO2
•	Models of Structural Change: Lewis model of unlimited supply of labour, Nurkse' Model, Fei and Ranis Model.							CO2

Unit 3		CO3
•	Dualistic Development: Social and Technological Dualism.	CO3
•	Models of Growth: Classical Model, Marxian Model, Schumpeter's Model, Harrod- Domar Model, Kaldor's Model, Rostow's stages of growth. Todaro MP Model	CO3
Unit 4		CO4
•	Capital formation: Meaning and Sources; capital –output ratio; Human Capital: Concept and utilization. Role of foreign Capital & MNC's.	CO4
•	Foreign Aid: Forms and sources; Trade vs. Aid; Transfer of technology. Dual Gap Analysis.	CO4
Text Books	1. Chew, S.C. and R. A. Denmark. *The Underdevelopment of Development*. Sage Publications. New Delhi.1999. 2. Debraj, Ray. *Development Economics.* Oxford University Press. 1998. 3. Meier, G. M. and J. E. Rauch. *Leading Issues in Economic Development.* Oxford University Press. 2000. 4. Taneja, M. L. and R. M. Myer. *Economics of Development and Planning.* Vishal Publications. 2014. 5. Thirlwall, A.P. *Growth and Development.* Palgrave Macmillan Publishers. 7th edition. 6. Todaro, M. P. and Stephen C. Smith. *Economic Development.* Pearson Publications. 2011.	

L	T	P	Credits
4	0	0	4

Course Code	ECN204							
Course Title	Regional Economics with Special Reference to Punjab Economy							
Course Outcomes	CO1: Students will learn about regional economics concepts, problems and policies. CO2: Students will be able to understand structural changes in Punjab economy. CO3: This will help in understanding agriculture and industrial growth and their importance in Punjab economy. CO4: Students will learn how to solve problem of resource mobilization & fiscal crisis in Punjab.							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1								
•	Regional Economics: Concept, Scope, and framework; Regional economic problems; Location factors;							CO1
•	Different Approaches to study Regional Economics; Location of places & their problems; Nature of Regions and relation of activities within a region							CO1
•	Regional policy & objectives.							CO1
Unit 2								CO2
•	Structural Changes in Punjab Economy: Agricultural in Punjab, Growth & productivity Green Revolution; role, performance & implications;							CO2
•	Agricultural diversification, rationale, constraints, and prospectus;							CO2
Unit 3								CO3

•	Industry in Punjab: Industrial development – Pattern, performance, constraints & challenges; Small–scale industry role, problems & prospects;	CO3
•	State & industrial development	CO3
Unit 4		CO4
•	Development of transport and banking in Punjab. Finances of Punjab State; Sources of revenue and heads of expenditure;	CO4
•	Problems of resource mobilization & fiscal crisis in Punjab.	CO4
Text Books	1.Hoover, F.M. : An Introduction to Regional Economics. 2.Richardson, H.W. : Regional Economics. 3.Johar, R.S.& J.S. Khanna : Studies in Punjab Economy. 4.Raikhy, P.S. & S.S. Gill : Resource Mobilization and Economic Development: A Regional Perspective. 5.Govt. of Punjab : Statistical Abstracts. 6.Bawa R.S. & P.S.Raikhy : Punjab Economy : Emerging Issues	

L	T	P	Credits
4	0	0	4

Course Code	ECN205						
Course Title	**Money and Banking**						
Course Outcomes	**CO1.** Understand nature, functions and growth of money, Supply creation of money and theories of demand for money, **CO2.** the process of credit creation of a commercial bank, the functions of commercial bank. Explain the various functions of central bank, credit policy of India. **CO3.** Application of traditional and modern theories of international trade, understanding of tariff and non-tariff barriers and their equilibrium analysis. **CO4.** Apply functions, provisions of international trade system and functions to facilitate the global trade. Students will be able analyze impact of WTO on current global trade in detail						
Examination Mode	Theory						
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1	Money: Introduction							CO1
•	Nature and functions of money							CO1
•	money and near money							CO1
•	Demand for money							CO1
•	Fisher, Cambridge, Keynesian theories							CO1
•	Supply of money, mechanics of money supply creation							CO1
•	measures of money supply in India							CO1
Unit 2	Rate of Interest							CO2
•	Meaning and Classification of Interest							CO2

•	Determination of interest rate	CO2
•	Factors affecting the level and structure of interest rates	CO2
•	Theories of interest: Classical theory of interest	CO2
•	Keynesian theory of interest	CO2
Unit 3	Commercial Banking	CO3
•	Meaning and types of commercial banks	CO3
•	Credit creation process of commercial banks	CO3
•	Central Banking: Meaning and functions	CO3
•	Techniques of credit control with special reference to India	CO3
Unit 4	Monetary system	CO4
•	Monetary Policy: Targets and indicators	CO4
•	macroeconomic objectives	CO4
•	Monetary policy in less developed countries	CO4
•	Indian Monetary and Credit System	CO4
•	System of note-issue; computation of money supply by the RBI	CO4
•	Problems and working of money and capital markets	CO4
Text Books	1.Sundram, K.P.M. *Money, Banking, Trade and Finance*. Sultan Chand & Sons. New Delhi. 2014 2. Gupta, S.B. *Monetary Economics-Institutions, Theory and Policy*. S. Chand & Co. Ltd. New Delhi. 1995. 3. L. M. Bhole and J. Mahukud. *Financial Institutions and Markets*. Tata McGraw Hill. 2011. 4. Misra, S. Puri. *Indian Economy*. Himalaya Publishing House. 2015. 5. Pathak, Bharati V. *The Indian Financial System*, *Market, Institutions & Services*. Pearson. 2008. 6. Paul, R.R. *Monetary Economics*. Kalyani Publishers. 2005. 7. Sundram, K.P.M. *Money, Banking, Trade and Finance*. Sultan Chand & Sons. New Delhi. 2014.	

L	T	P	Credits
4	0	0	4

Course Code	ECN252							
Course Title	Statistics – II							
Course Outcomes	CO 1: Students study the basics of statistical inference. CO 2: Create and conduct an empirical research project in Economics CO 3: To understand hypothesis testing and research methodology CO 4: To acquire thorough understanding of data analysis, statistical tools and research methodology that facilitate transition to higher research programs like M.A/MSc and PhD.							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1								CO1
•	Correlation and Regression Analysis: Partial and multiple correlation coefficients: Derivations, application and properties.							CO1
•	Fitting of multiple regression by least squares technique stress on numericalexamples.							CO1
Unit 2								CO2
•	Skewness, Moments and Kurtosis: Introduction, Difference between dispersion and Skewness Tests of Skewness, Absolute measure of Skewness, Karl Pearson's coefficient of Skewness, Bowley's coefficient of Skewness Kelly's coefficient of Skewness.							CO2
•	Moments about arbitrary origin, Central Moments, Momentsabout zero. Measures of Kurtosis.							CO2
Unit 3								CO3

•	Time Series Analysis: Meaning, Components: Models, economic significance of time series, methods of estimating trend and seasonal variations.	CO3
•	Growth Curves**:** Properties, methods of estimation andapplications of parabolic, geometric, exponential, modified exponential, Gompertz and logistic growthcurves.	CO3
Unit 4		CO4
•	Probability: Definition (classical and empirical only), laws of probability, conditional probability, and independence of events (applications only)	CO4
•	Concept of random variables, probability density and massfunction, expectation, moments, moment generating function, properties (without proof).	CO4
Text Books	1. Nagar A.L. and R.K. Das. *Basic Statistics*. Oxford University Press. 1976. 2. Gupta, S.C. *Fundamentals of Statistics*, Himalaya Publishing House. New Delhi. 2013. 3. Gupta, S.P. *Statistical Methods.* Sultan Chand and Sons. New Delhi. 2012. 4. Gupta C.B. *An Introduction to Statistical Methods*. Vikas Publishing House. New Delhi. 2009. 5. Spiegel, M.R. *Theory &Problems of Statistics*. McGraw Hill. 2009.	

L	T	P	Credits
4	0	0	4

Course Code	ECN253							
Course Title	Mathematics for Economists – I							
Course Outcomes	CO1: Students will be well versed with identifying various mathematical functions and their applications at course completion. CO2: Mathematical outcomes will be interpreted well in terms of economics. CO3: Students will get to learn applications of mathematical tools to economy. CO4: A basic understanding of this course is essential for solving problems pertaining to economic theory where mathematics is used as a tool							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1								CO1
•	The straight line, Mathematical modelling, Applications: Demand, Supply, Cost, and Revenue.							CO1
•	Translations of linear Functions, elasticity of demand, Supply and Income, Budget and cost constraints,Excel for linear Functions.							CO1
Unit 2								
•	Simultaneous equations: Solving simultaneous equations, Equilibrium and break even, Consumer andproducer surplus							CO2
•	Non-linear functions and applications; Quadratic, Cubic and other polynomial functions. Exponential functions.							CO2
Unit 3								
•	Arithmetic Progression; Definition nth term of an A.P, sum of n terms, Arithmetic mean, A.M. between two numbers, application of A.P. series							CO3
•	Geometric Progression; Definition, nth terms of G.P. series, sumof n terms, Geometric mean between two numbers, Application of G.P. series							CO3

Unit 4		
•	Financial Mathematics: Simple interest, compound interest and annual percentage rates, depreciation, net present value and internal rate of return	CO4
•	Annuities, debt repayments, Sinking funds, the relationshipbetween interest rate and the prices of bonds.	CO4
Text Books	1. Bradley T. Paul Patton. *Essential Mathematics for Economics and Business*. Wiley Publication. 2014. 2. Chiang, A.C. *Fundamental Methods of Mathematics Economics*. McGraw Hill. 2005. 3. Kandoi, B. *Mathematics for Business and Economics with Applications.*Volume-1. Himalaya Publishing House. New Delhi. 2011. 4. Kandoi, B. *Mathematics for Business and Economics with Applications.*Volume-1I. Himalaya Publishing House. New Delhi. 2011. 5. Yamane, T. *Mathematics for Economist.* Prentice Hall of India. New Delhi. 2001.	

L	T	P	Credits
4	0	0	4

Course Code	ECN301							
Course Title	Agricultural Economics							
Course Outcomes	**CO1:** Understand the nature, importance and role of agriculture in Indian economy and reasons for backwardness. **CO2:** Need, role and importance of agriculture credit. Various institutions available for credit, land reforms done by the government. **CO3:** New agriculture technology and its impact on various factors related with agriculture. **CO4:** Structure, type and defects of agriculture marketing in India. Agriculture price policy and mobilization of agriculture surplus.							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1	Agriculture Economics in the economy							CO1
•	Nature, scope of agriculture and its importance in economics							CO1
•	Role of agriculturein economic development							CO1
•	Reasons for backwardness of Indian agriculture							CO1
•	Transforming traditional agriculture							CO1
•	Farming Systems: Family farming, co-operative farming, collective farming and state farming							CO1
•	Farm size and productivity							CO1
Unit 2	Agricultural credit							CO2
•	Need, role of co-operative and commercial banks							CO2
•	Land reforms- consolidation of holdings							CO2

•	abolition of intermediaries	CO2
•	ceiling on land holdings and tenurial reforms	CO2
•	need, nature and evaluation with special reference to India	CO2
Unit 3	New agricultural technology	CO3
•	Its impact on production	CO3
•	Its impact on income distribution and labour absorption	CO3
•	Negative consequences of new agricultural technology in the context of Punjab	CO3
•	Crop diversification – Need, progress and problems	CO3
Unit 4	Agricultural Marketing in India	CO4
•	Structure, types and defects of agriculture markets in India	CO4
•	Marketing functions, marketing margins,marketed surplus and marketable surplus	CO4
•	Factors affecting marketed surplus	CO4
•	Agricultural Price Policy: Need and objectives	CO4
•	Mobilization of agricultural surpluses	CO4
•	Terms of tradebetween agriculture and industry	CO4
•	Agricultural taxation in India	CO4
Text Books	1. Sourth Worth, H.M. and John Sten, B.F. *Agricultural Development and Economic Growth* (1967) 2 Sadhu, A.N. and Amarjit Singh. *Fundamentals of Agricultural Economics*, Himalaya Publishers.New Delhi. 3.Schultz T.W. *Transforming Traditional Agriculture*(1964) 4. H Drummond, John Goodwin. *Agriculture Economics*. Pearson Publication. 2013. 6. Sadhu, A.N. and Amarjit Singh. *Fundamentals of Agricultural Economics*, Himalaya Publishers. New Delhi. 2012.	

L	T	P	Credits
4	0	0	4

Course Code	ECN302							
Course Title	Indian Economy							
Course Outcomes	**CO1.** Develop ideas of the basic characteristics of Indian economy, its potential on natural resources. **CO2.** Understand the importance, causes and impact of population growth and its distribution, translate and relate them with economic development. **CO3.** Understand agriculture as the foundation of economic growth and development, analyze the progress and changing nature of agricultural sector and its contribution to the economy as a whole. **CO4.** Grasp the importance of planning undertaken by the government of India, have knowledge on the various objectives, failures and achievements as the foundation of the ongoing planning and economic reforms taken by the government.							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1	Structure of Indian Economy							CO1
•	National Income and Trends, Sectorial contribution, Inter-state variation ofNational income in India							CO1
•	Capital Formation and Economic Development in India							CO1
•	Human resources and economic development in India: Size and growth rate of population in India							CO1
•	Demographic features of India's Population, Population Policy in India, Family Planning and welfareprogramme in India.							CO1
•	Poverty Line and various measures to control Poverty							CO1
Unit 2	Economic Planning in India							CO2

•	Review of Five Year Plans in India	CO2
•	Resources mobilization during different plans	CO2
•	Structure, role and functions of NITI Ayog	CO2
Unit 3	Basic Issues in Agriculture	CO3
•	Role, nature and Emerging trends in agriculture	CO3
•	Factors determining productivity and Remedies measures to raise agriculture productivity inIndia	CO3
•	Agriculture sustainability and development during plan period	CO3
•	Issues in Industrial Development: Industrial development during planning period	CO3
•	Review of Industrial policy of 1948, 1956, 1977 and new industrial policy 1991 and latest policies	CO3
•	Small scale and Cottage industries in India and MSME	CO3
•	Public sector in India-its role, growth, performance,problems; Issue of privatization.	CO3
Unit 4	External Sector: India's foreign trade	CO4
•	features, composition and direction of Indian foreign trade	CO4
•	India's balance of payments position in India	CO4
•	Foreign Trade policy in India	CO4
•	Current Global slowdown and financial turmoil and itsimpact on Indian economy	CO4
Text Books	1. Kapila, Uma, Indian Economy: Programme and Policies, Academic Foundation, New Delhi, 2015. 2. Dutt, Ruddra and, K.P.M. Sundharam. *Indian Economy*. New Delhi: S. Chand and Company Ltd.2015. 3. Misra, S.K. & V.K. Puri. Indian Economy. Himalayan Publishing House. 2015.	

L	T	P	Credits
4	0	0	4

Course Code	ECN351							
Course Title	Statistics – III							
Course Outcomes	CO1: Students will learn theoretical distribution and derivation with numerical. CO2: Students will get detailed knowledge about sampling concepts. CO3: Enable the students to understand theories of estimation. CO4: It makes the students to understand the testing of hypothesis.							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1								CO1
•	Theoretical Distribution; binomial, Poisson and normal distributions							CO1
•	Derivation with numerical examples based upon these distributions and their fitting.							CO1
Unit 2								CO2
•	Sampling: Concepts used in sampling: methods of sampling simple random, systematic, and stratified.							CO2
•	Point estimation: Concept of random sampling, meaning of an estimator; properties of a good estimator;methods of estimation.							CO2
Unit 3								CO3
•	Theories of estimation; Point Estimation, Interval Estimation.							CO3
•	Concepts of null and alternative hypothesis;types of errors; some elementary tests based on above sampling distributions.							CO3

Unit 4		CO4
•	Testing of Hypothesis; Large sample test; Sampling of attributes, Test of significance for difference ofproportion, Single mean, Differences of means.	CO4
•	t- test, chi square and F-test.	CO4
Text Books	1. Gupta, S.C. and V.K. Kapoor. *Fundamental of Applied Statistics*. Sultan Chand and Sons. New Delhi.2010 2. Kapur, J.N. and H.C. Saxena. *Mathematical Statistics*. S. Chand and Company. New Delhi. 1995. 3. Mood, A.M. and F.A. Gray Bill. *Introduction to the Theory of Statistics*. McGraw Hill Company, NewYork. 1963.	

L	T	P	Credits
4	0	0	4

Course Code	ECN352							
Course Title	Mathematics for Economists – II							
Course Outcomes	CO1: Students will be able to understand sets and relations. CO2: Enable the students to understand about differentiation and partial differentiation. CO3: Provide knowledge of maxima, minima and basic trigonometric functions. CO4: Students will have good knowledge about matrices.							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1								
•	Sets and Relations: Functions-types of function and its application in economics							CO1
•	System of equations and Inequalities in Market Equilibrium . Limits and Continuity of functions.							CO1
Unit 2								CO2
•	Differentiation: Rules of differentiation, Economic Applications; Marginal revenue, average revenue, totalrevenue, marginal cost, average cost and total cost.							CO2
•	Partial differentiation and Euler's theorem							CO2
Unit 3								CO3
•	Maxima and Minima, profit maximization							CO3

•	Basic Trigonometric Functions: Angle – Positive and negative, Trigonometric ratio of angle, t value of ratio.	CO3
Unit 4		CO4
•	Linear Algebra: Matrices, types, products of matrices, inverse of matrix, rank of a matrix, determinants	CO4
•	Simultaneous linear equations (Cramer's rule). Rank method	CO4
Text Books	1. Bradley T. Paul Patton. *Essential Mathematics for Economics and Business.* Wiley Publication. 2014 2. Chiang, A.C. *Fundamental Methods of Mathematics Economics*. McGraw Hill. 2005 3. Kandoi, B. *Mathematics for Business and Economics with Applications.* Volume-I, HimalayaPublishing House. New Delhi. 2011. 4. Kandoi, B. *Mathematics for Business and Economics with Applications.* Volume-II, HimalayaPublishing House. New Delhi. 2011. 5. Monga, G.S. *Mathematics and Statistics for Economics*. Vikas Publication. New Delhi. 2005. 6. Yamane, T. *Mathematics for Economist.* Prentice Hall of India. New Delhi. 2001.	

L	T	P	Credits
4	0	0	4

Course Code	ECN303							
Course Title	Public Finance							
Course Outcomes	CO1. Understand the sources of finance both public and private, demonstrate the role of government to correct market failures and possible advantage of public financing. CO2. Understand the possible burden, benefits and distribution of various types of taxes among various classes of people, know the general trend and impact on general welfare and arouse them to suggest good and bad tax system. CO3. Understand the needs of public borrowing from all possible sources to meet necessary public investment/expenditures. Also be alerted to find sources for repayment. CO4. Deliver effectively the preparation of budget and how they are passed in the house. Understand the changes in size and flexibility of state and central budget along with the role played by Finance							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1								
•	Introduction: Nature and scope of public finance, categories of revenue, fiscal functions (allocation,distribution and stability), meaning of public sector and public expenditure.							CO1
•	Market Performance: Meaning of efficiency, externalities, private versus public good – their efficientprovision, merit goods.							CO1
Unit 2								CO2
•	Taxation: Requirements for a good tax structure; benefit principle, ability to pay principle, equity(horizontal and vertical);							CO2

•	Tax base (income, consumption and wealth); direct vs. indirect taxes, proportional vs. progressive taxes; tax incidence (Concept and measurement).	CO2
Unit 3		CO3
•	Optimal Taxation: Normative versus positive, commodity tax, income tax, analysis of normative andpositive optimal tax.	CO3
•	Public Debt: Concept, objectives and significances of public debt, sources of public borrowings; distinctionbetween internal and external debt.	CO3
Unit 4		CO4
•	Issues in Indian Public Finance: Recent tax reforms, fiscal federalism in India, state and local finances.	CO4
•	International Issues: Global public goods, taxation of international trade, government revenue andsmuggling	CO4
Text Books	1. Musgrave, R. A and P. B Musgrave. *Public Finance in Theory and Practices,* McGraw-Hill International Editions, 1989. 2. Cullis, John and Philip Jones, *Public Finance and Public Choice*, Oxford University Press,Third Edition (Indian), 2010. 3. Rao, M Govind and Mihir, Rakshit. *Public Economics: Theory and Policy Essays in Honor of Amaresh Bagchi*, Sage Publications, 2011. *4.* Srivastava, D K and U, Shankar (ed.). *Development and Public Finance: Essays in Honour of Raja J. Chelliah*, Sage Publications, 2012.	

L	T	P	Credits
4	0	0	4

Course Code	ECN304							
Course Title	International Economics							
Course Outcomes	CO 1 – To enable students to understand the basic concepts related to international trade. CO 2- To familiarize students with policies that influence trade between countries. CO3- To familiarize students about Balance of Payment and intricacies of exchange rate determination. CO 4-To enable students to have a basic understanding of the emerging trends in the field of international economic system.							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1								
•	Trade Theories and Commercial Policy: Theories of absolute advantage, comparative advantage, and opportunity cost;							CO1
•	Heckscher-Ohlin theory of trade- its main features, assumptions, and limitations.							CO1
•	Termsof trade (concepts and secular deterioration in terms of trade).							CO1
Unit 2								
•	Instruments of Trade Policy: Rationale of protection; Tariff and non-tariff barriers to trade (quota, voluntaryexport restraints, export subsidies, dumping and international cartel);							CO2
•	Tariff and quota (partial equilibriumanalysis).							CO2
Unit 3								CO3

•	Balance of Payments: Concepts and components of balance of payments.	CO3
•	Equilibrium and disequilibriumin balance of payments; various measures to correct deficit in the balance of payment.	CO3
Unit 4		CO4
•	Exchange Rate: Meaning, concept of equilibrium exchange rate and determination; Fixed versus flexible exchange rates: Managed floating exchange rate; Purchasing Power Parity (absolute, relative); Bretton wood systems and its breakdown.	CO4
•	Contemporary Issues: Financial Globalization, Global Financial Crises (2007-2009), IMF its working andoperation.	CO4
Text Books	1. Krugman, Paul, M. Obstfeld and Marc J. Melitz. *International Economics: Theory and Policy.* AddisonWesley Longman. Ninth Edition, 2012. 2. Salvatore, D.K. *International Economics*. John Wiley and Sons. 2013. 3. Soderston, Bo and G. Reed. *International Economics*. Macmillan Publishing House. 1994.	

L	T	P	Credits
4	0	0	4

Course Code	ECN305							
Course Title	**Economics of Health and Education**							
Course Outcomes	CO1: Enable the students to understand the importance of health economics. CO2: To provide knowledge about the demand and supply of health care. CO3: It provides knowledge regarding the formulation health financing policy. CO4: Students will know the importance of education & investment in human capital.							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1	Introduction to Health Economics							CO1
•	Meaning, Importance and Essential Features of Health Economics							CO1
•	Concepts: Health, Health Care, Birth rate, Fertility rate, Death rate, IMR, CMR, MMR,							CO1
•	Morbidity rate (Acute and Chronic), Adjusted Life Year (DALY)							CO1
•	Quality Adjusted Life Year (QUALY), Sex Ratio.							CO1
Unit 2	Demand and Supply of Heath Care:							CO2
•	Demand for Health Care							CO2
•	Case of Health Care Accessibility							CO2
•	Socio Economic and Cultural Features							CO2
•	Supply of Health, Health Care Delivery System							CO2
•	Pricing of Health Care							CO2

Unit 3	Health Financing Policy	CO2
•	Health Expenditure – Public & Private – Direct and Indirect	CO3
•	Health Insurance, Concept of User Cost	CO3
•	Health Policy of WHO	CO3
•	National Health Policy – NRHM	CO3
•	Health as a State Subject	CO3
Unit 4	Education & Investment in Human Capital	CO4
•	Rate of Return to Education: Private and Social	CO4
•	Quality of Education, Signaling or Human Capital	CO4
•	Theories of Discrimination	CO4
•	Gender and Caste Discrimination in India	CO4
•	Literacy Rates, School articipation, School	CO4
•	Quality Measures with special reference to India	CO4
Text Books	1. Henderson J.W. *Health Economics and Policy* .Thomson learning. Latest Edition. 2. Ramankutty. *A Premier of Health System Economics*. Allied publications. New Delhi. 2007 3. Ronald G., Ehrenberg and S. Robert and Smith. *Modern Labor Economics: Theory and Public Policy*. Addison Wesley. 2005. 4. William, Jack. *Principles of Health Economics for Developing Countries*. World BankInstitute Development Studies. 1999. 5. World Development Report. *Investing in Health*. The World Bank, 2014.	

L	T	P	Credits
4	0	0	4

Course Code	ECN306							
Course Title	Environmental Economics							
Course Outcomes	CO 1: It will familiarize the students the association of the economy and environment CO 2: Enable students to develop a comprehensive knowledge on the environmental theories for analysis CO3: This would impart the skills essential for understanding and solving the environmental issues. CO 4: Enable the students to impart knowledge about environmental policy tools and disaster management in India							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1	Introduction to Environmental Economics							CO1
•	Meaning, Scope and Importance of environmental economics							CO1
•	Positive and NormativeEconomics							CO1
•	Type of Environmental Goods							CO1
•	Use value and Nonuse value (existence, altruistic and bequest value)							CO1
•	Public goods, Private goods, Club goods							CO1
•	Open access resources							CO1
Unit 2	Market Failure and Externalities							CO2
•	Theory of Environmental Regulation and Policy							CO2
•	Assignment of PropertyRights and Coase Theorem							CO2

•	Government Interventions: - Command & Control Measures	CO2
•	Marketable Instruments	CO2
Unit 3	Valuation of Environmental Goods and Services	CO3
•	Indirect method (revealed preference)	CO3
•	household production function–travel cost, hedonic pricing	CO3
•	direct/stated preference method – contingent valuation	CO3
Unit 4	Economic Growth and the Natural Environment	CO4
•	Rise and fall of Environmental Kuznets Curve	CO4
•	Sustainable Development: - Meaning of sustainability	CO4
•	weak or strong, goals and indicators of sustainable development	CO4
•	National Accounting and the Natural Environment	CO4
•	Green National Income Accounting with specialreference to India	CO4
Text Books	Roger Perman, Yue Ma, James McGilvray and Michael Common. *Natural Resource andEnvironmental Economics*. Pearson Education/Addison Wesley. 3rd edition. Kolstad, Charles D. *Intermediate Environmental Economics.* Oxford University Press.	

L	T	P	Credits
4	0	0	4

Course Code	ECN353							
Course Title	Mathematics for Economists – III							
Course Outcomes	CO1: Students will learn about difference equations and their applications. CO2: Students will be able to understand simple integration and their applications. CO3: It enables the students to learn Input – Output Analysis. CO4: Students will learn about linear programming and Duality theorem.							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1								CO1
•	Difference equations and their applications; Linear Homogenous Difference Equation of First order.							CO1
•	Non-Linear differential equation of First Order.							CO1
Unit 2								CO2
•	Simple Integration and Applications; Rules of Integration, Methods of Integration, Integration by Parts							CO2
•	Economic Applications: Cost, Revenue, Demand Function, Consumer surplus.							CO2
Unit 3								
•	Input – Output Analysis: Assumptions; Transaction matrix: Technical coefficients, Hawkin–Simon Conditions, Metzler condition, open and close input-output systems							CO3

•	Dynamic input output analysis (an introduction).	CO3
Unit 4		
•	Linear Programming: Formulation of linear programming p r o b l e m. Graphical method, Simplex method,Two-phase simplex method, unbounded solution, infeasible solution, degeneracy and cycling problem.	CO4
•	Duality theorem, Solution of primal and dual by simplex method. Dual simplex method.	CO4
Text Books	1. Bradley T. Paul Patton. *Essential Mathematics for Economics and Business*. Wiley Publication. 2014. 2. Chiang, A.C. *Fundamental Methods of Mathematics Economics*. McGraw Hill. 2005. 3.Kandoi, B. *Mathematics for Business and Economics with Applications*. Volume-1, HimalayaPublishing House. New Delhi. 2011. 4. Kandoi, B. *Mathematics for Business and Economics with Applications*. Volume-II, HimalayaPublishing House. New Delhi. 2011. 5. Monga, G.S. *Mathematics and Statistics for Economics*. Vikas Publication. New Delhi. 2005. 6. Yamane, T. *Mathematics for Economist*. Prentice Hall of India. New Delhi. 2001.	

L	T	P	Credits
4	0	0	4

Course Code	ECN401							
Course Title	Industrial Economics							
Course Outcomes	CO1: It makes the students to understand the nature and scope of industrial economics. CO2: Students will understand the industrial efficiency and technical efficiency. CO3: It makes learners to understand the growth of firm and market structure. CO4: It makes the students to understand various theories of Industrial Location							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1								
•	Definition: Nature and scope of Industrial Economics.							CO1
•	History and development of industrial Economics.							CO1
•	Basic Concepts: Firm, industry, Market, Market structure, Market power, passive and active behavior of the firm.							CO1
Unit 2								CO2
•	Conceptual framework for the study of Industrial Economics.							CO2
•	Organizational form and alternative motivesof the firm.							CO2
•	Industrial efficiency and technical efficiency. Optimum size of the firm.							CO2
Unit 3								CO3

•	Growth of the firm: Acquisition, diversification, merger constraints on Growth: demand, managerial andfinancial.	CO3
•	Market Structure: Seller's concentration; product differentiation; entry conditions and economics of scale.	CO3
Unit 4		CO4
•	Theories of Industrial Location: Factors affecting location; contributions of weber and Sargent Florance. Location policy in India since Independence.	CO4
•	Industrial concentration and dispersal in India. Industrial growth under planning in India and trends in industrial growth after liberalization period.	CO4
•	Industrial policy and licensing policy, MRTP Act and FERA Act in India and current industrial policy.	CO4
Text Books	1. Barthwal, R. R. 2007. *Industrial Economics: An Introductory Text Book*. New Age International.New Delhi. 2. Ferguson, P. R.1998. *Industrial Economics: Issues and Prospectus*. New York University Press. 3. Seth, R. 2010, *Industrial Economics.* Ane Book. New Delhi.	

L	T	P	Credits
4	0	0	4

Course Code	ECN402							
Course Title	Labour Economics							
Course Outcomes	CO1: It involves the study of the factors and structure of labor and importance in the economic activities. CO2: It helps to understand the employers demand as well who requires the service of labour CO3: It helps to analyses the wage structure, income and level of employment Co4: Labour economics deals with various aspects of labour organizations, wage bargaining and man power economics.							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1								CO1
•	Introduction to Labour Economics: Meaning, Scope and Importance.							CO1
•	Labour Demand: Nature, Marginal Productivity Theory and demand for labour under different market forms, Short run and Long run labour demand curve for firm and industry; elasticity of substitution;							CO1
•	Marshall's rules of derived demand.							CO1
Unit 2								CO2
•	Labour Supply: Neoclassical Model of labour-leisure choice;							CO2
•	Effects of changes in non-labour income andwage rate on individual equilibrium; role of income and substitution effect, backward bending supply curve;							CO2

•	Individual and market labour supply curve.	CO2
Unit 3		CO3
•	Equilibrium in Labour Market: Analysis of equilibrium under the competitive and non-competitive market forms, Neo Classical theory of labour market.	CO3
•	Unemployment: History of Economic Thought – classical theory, Keynesian, New Classical, Phillips curve,Monetarism; various concepts of unemployment; work participation, labour absorption.	CO3
Unit 4		CO4
•	Rural and Urban Labour Market: Labour Market Reforms in India; Labour Laws in India; Subsistence wageand Minimum Wage Act in India;	CO4
•	Contemporary issues (post liberalization era); Welfare programmes, government wage employment and self-employment programmes.	CO4
•	Human Capital; Labour Mobility; ChildLabour issues; Issues in developing and transition economies.	CO4
Text Books	1. Borjas, George J. *Labour Economics*. McGraw-Hill Irwin. 2013. 2. Gould, J. P. and P. Edward Lazear. *Microeconomic Theory*. AITBS Publishers and Distributors Delhi.2001. 3. Government of India. *Indian Labour Yearbooks (various issues),* GOI 4. Kar, Saibal and Debabratta, Datta. *Industrial and Labor Economics: Issues in Developing and Transition Countries*. Springer India. 2015. 5. Smith, Stephen. *Labour Economics*. Routledge. 2003	

L	T	P	Credits
4	0	0	4

Course Code	ECN403						
Course Title	**Research Methodology**						
Course Outcomes	CO1: Students will gain the knowledge of sample type and size. CO2: To provide knowledge about errors in survey. CO3: Students will learn how to process collected data. CO4: Develop understanding on publication ethics and publication misconduct and gather the knowledge about plagiarism.						
Examination Mode	Theory						
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1	Sample type and size							CO1
•	Simple random sampling							CO1
•	cluster sampling							CO1
•	stratified sampling and its complications							CO1
•	Determining an appropriate size							CO1
Unit 2	Measurement scales in research							CO2
•	Errors in surveys							CO2
•	Misunderstanding of questions and answers							CO2
•	problem of nonresponse							CO2
•	Processing of survey data							CO2
Unit 3	Cleaning of data and its coding							CO3

•	Ethics and scientific integrity	CO3
•	Standards of conduct, privacy in data	CO3
Unit 4	**R**esearch Ethics	CO3
•	Publication ethics: definition, introduction and importance, best practices / standards setting initiatives and guidelines: COPE, WAME, etc., Conflicts of interest.	CO4
•	Publication misconduct: definition, concept, Violation of publication ethics, authorship and contributorship, Identification of publication misconduct, complaints and appeals, Predatory publishers and journals	CO4
•	Plagiarism software like Tumitin, Urkund and other open-source software tools, Databases-Indexing databases, Citation databases: Web of Science, Scopus, etc.,	CO4
Text Books	1. Bethlehem, J. (2009). *Applied survey methods: A statistical perspective.* Wiley. 2. Cochran, W. (2008). *Sampling techniques, 3rd ed.* Wiley. 3. Cooper, D., Schindler, P., Sharma, J. (2012). *Business research methods*, *12th ed.* McGraw-Hill. 4. Flick, U. (2012). *Introducing research methodology: A beginner's guide to doing a research project*. Sage Publications. 5. Groves, R., Fowler, F., Couper, M., Lepkowski, J., Singer, E., Tourangeau, R. (2009). *Survey Methodology*. Wiley. 6. Kumar, R. (2014). *Research methodology: A step by step guide for beginners*, *4th ed.* Sage Publications. 7. P.Chandah. (2018). Ethics in Competitive Research: Do not get Scooped; do not get plagiarized.	

L	T	P	Credits
4	0	0	4

Course Code	ECN405							
Course Title	Global Political Economy							
Course Outcomes	CO1: Understand the basic concepts of global political economy. CO2: Able to understand the concepts of changing dynamics of capitalist production. CO3: Students will learn about the political economy of global trade. CO4: It enables students to understand the era of globalisation and global economic instability and crisis.							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1	Introduction and overview							CO1
•	Perspectives on political economy of globalisation with a historical overview							CO1
Unit 2	Changing dynamics of capitalist production							CO2
•	Organizational forms and Labour processes							CO2
•	Fordist and post-Fordist production regimes							CO2
•	Multinational corporations –evolution, structural form and dynamics							CO2
•	global value chains and production networks							CO2
•	the changing nature of employment, job security and Labour rights in a globalised economy							CO2
Unit 3	The political economy of global trade							CO3
•	Structure and institutions of the international trade regime							CO3
•	The role of finance in the globalised economy							CO3

•	financialisation of the global economy – trends, instruments, features and consequences	CO3
Unit 4	The state in the era of globalisation	CO4
•	Globalisation and the limits of the welfare and developmental states	CO4
•	Global economic instability and crisis	CO4
•	The 2008 global economic crisis – prelude, proximate and long term causes	CO4
•	Possibility of recurring crises	CO4
Text Books	1. Bhaduri, A. (2002). Nationalism and economic policy in the era of globalization. In D. Nayyar (ed.): *Governing globalization: Issues and institutions*. Oxford University Press. 2. Chang, D. (2009). Informalising labour in Asia's global factory. *Journal of Contemporary Asia,* 39, 161-179. 3. Dore, R. (2008). Financialisation of the global economy. *Industrial and Corporate Change,* 17, 1097-1112. 4. Harvey, D. (2005). *A brief history of neoliberalism.* Introduction, Chapters 1-3. Oxford University Press. 5. Winham, G. (2011). The evolution of the global trade regime. In J. Ravenhill (ed.): *Global political economy.* Oxford University Press.	

L	T	P	Credits
4	0	0	4

Course Code	ECN406							
Course Title	Advanced Global Trade Challenges and Opportunities							
Course Outcomes	CO1: Students will able to understand trade policy implications and global value chains. CO2: It enables the students to understand the importance of innovation and digitalization in trade. CO3: Students will understand the concepts political economy and geopolitics of trade. CO4: It will enable them to understand the challenges in trade, trade negotiations and diplomacy.							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1	**Review of International Economics**							CO1
•	Brief review of key concepts in international economics							CO1
•	Comparative advantage and trade theories							CO1
•	Trade policy and its implications							CO1
•	**Global Value Chains (GVCs)**							CO1
•	Understanding GVCs and their significance							CO1
•	GVC governance and coordination							CO1
•	GVC participation and upgrading strategies							CO1
Unit 2	**Trade and Innovation**							CO2

•	Intellectual property rights (IPR) and trade	CO2
•	Technology transfer and its impact on trade	CO2
•	Innovation-driven trade policies	CO2
•	**Trade in Services and Digital Trade**	CO2
•	In-depth analysis of trade in services	CO2
•	The role of e-commerce and digital trade	CO2
•	Regulatory challenges in the digital economy	CO2
Unit 3	**Trade Policy and Political Economy**	CO3
•	Political economy of trade policy	CO3
•	Lobbying and interest groups in trade	CO3
•	Trade policy-making in a globalized world	CO3
•	**Geopolitics of Trade**	CO3
•	Geopolitical factors shaping trade dynamics	CO3
•	Trade tensions and disputes among major economies	CO3
•	National security considerations in trade policy	CO3
Unit 4	**Trade and Emerging Markets**	CO4
•	Challenges and opportunities in emerging markets	CO4
•	Trade strategies of emerging economies	CO4
•	**Trade Finance and Risk Management**	CO4

•	Financing international trade	CO4
•	Managing currency and financial risks	CO4
•	Trade credit and insurance	CO4
•	**Trade Negotiations and Diplomacy**	CO4
•	Advanced negotiation techniques in trade agreements	CO4
•	Diplomatic skills in trade diplomacy	CO4
Text Books	1. Global Business Today" by Charles W. L. Hill and G. Tomas M. Hult 2. Global Value Chains: Linking Local Producers from Developing Countries to International Markets" by Gary Gereffi 3. International Trade: Theory and Policy" by Paul Krugman and Maurice Obstfeld 4. International Trade: Feenstra and Taylor" by Robert C. Feenstra and Alan M. Taylor 5. Trade, Development and Political Economy: Essays in Honour of Anne O. Krueger" edited by Sadik D. Al-Azm and Naved Hamid	

L	T	P	Credits
4	0	0	4

Course Code	ECN407							
Course Title	The History of Economic Thought							
Course Outcomes	CO1: familiarize the concept mercantilism & Physiocrats and the physiocratic school. CO2: Acquire knowledge of British political economy. CO3: Enabling the students to have depth of socialism. CO4: Enable students to understand Indian economic thoughts.							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1								CO1
•	Mercantilism & Physiocrats - 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.							CO1
•	Works of Francis Bacon, Thomas Mum, Josiah Child, John Cary, Charles Davenant, John Stuart Mill Age of Enlightenment – France, Italy, Scotland.							CO1
•	The Physiocratic school. Definition of surplus. The organization of economic activities and transactions. The Tableau Economique Works of Jacques Turgot, Francois Quesnay, Richard Cantillon.							CO1
Unit 2								CO2

•	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).	CO2
•	Income Distribution, Works of Adam Smith, David Ricardo, Robert Malthus.	CO2
•	Objections raised by J. B. Say, Charles Dupuit, W Stanley Jevons, and Leon Walras, J.M. Keynes	CO2
Unit 3		CO3
•	Socialism - Rise of Socialist ideas, Political background, Ricardian Theory of Rent, Nationalization of Land, French Socialists, Marxism, Marx's writings in theoretical economics.	CO3
•	The Marxian twist, Marxism post – 1991 - Schumpeter's Critique.	CO3
Unit 4		CO4
•	Indian Economic Thought - Early Indian economic thought - Chanakya's Artha shastra - Colonial Economic policies, Unfair treatment of the colonies, Nationalist response, Swadeshi Movement.	CO4
•	Economic ideas of M. G. Ranade, Dadabhay Nowrosjee, Gopal Krishna Gokhale, Dr. B. R. Ambedkar, M.K. Gandhi	CO4
Text Books	1.History of Economic Analysis by Joseph Schumpeter 2.Handbook on the History of Economic Analysis (eds) G. Faccarello and Heinz D. Kurz.	

L	T	P	Credits
4	0	0	4

Course Code	ECN408							
Course Title	**Financial Economics**							
Course Outcomes	CO1: To familiarize the students with the basic concepts in financial economics CO2: To provide comprehensive knowledge on the role of finance and financial systems in operation CO3: The course intends to familiarize the students with the basic concepts in money market and capital market CO 4: To enable students to know the operation of the Indian Financial System and activities in the financial markets.							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1	Financial system and Financial Markets							CO1
•	Financial system-Structure-Functions- Financial markets							CO1
•	Financial Instruments -Financial system and Economic development							CO1
•	Money market-Meaning-Functions							CO1
•	Instruments of money market-Call loans, Collateral loans, Promissory notes, Bills of Exchange, Treasury Bills, Gilt edged securities							CO1
•	RBI in Indian Money market							CO1
Unit 2	Capital Market							CO2
•	Capital market- Meaning – Functions-Structure-Primary and Secondary markets							CO2

•	Instruments of Capital market- Bonds and debentures, Government promissory notes, Public sector bonds	CO2
•	Initial Public Offer-Methods of floatation of shares	CO2
•	Secondary Market- Nature and functions of stock exchanges -Settlement and trading in stock exchange	CO2
•	Players in stock exchanges -Speculators-Bulls, Bears, Lame duck, Stag-Kerb trading, Insider trading- Listing of securities	CO2
Unit 3	Security Market Analysis	CO3
•	Risk-Return on risk-types of risk- Security Evaluation	CO3
•	Fundamental Analysis, Technical Analysis -Fundamental Analysis	CO3
•	Dow Theory, Dow-Jones Index, Elliot Wave Theory	CO3
•	Derivatives-Options, Futures/Forwards, Swaps Construction of Stock market indices	CO3
Unit 4	Indian Financial System	CO4
•	Structure of Indian Financial System-Organization and management of Indian Stock Exchanges	CO4
•	Depositories in India NSDL, CSDL	CO4
•	Development financial institutions	CO4
•	Pension and Provident Funds, National Pension system and PFRDA (Pension Funds Regulatory and Development Authority)	CO4
•	Mutual funds- Venture capital funds- NBFIS, Chit Funds	CO4
•	Credit rating agencies in India	CO4
Text Books	1. Bhole, L M (1999): Financial Institutions and Markets, TATA Mc Graw Hill Co Ltd, New Delhi • 2. Gupta, S B (2007): Monetary Economics Institutions Theory and Policy, Chand and Co Ltd 3.Khan, N Y (1996): Indian Financial system, TATA Mc Graw Hill Co Ltd, New Delhi 4.Bharathi V Pathak(2003):Indian Financial system, Pierson Education, New Delhi.	

L	T	P	Credits
4	0	0	4

Course Code	ECN452							
Course Title	Basic Econometrics							
Course Outcomes	CO1- To provide an understanding of Econometrics CO2- To equip students with knowledge required for the estimation of simple linear regression model and providing a basic idea about the multiple regression model. CO3- To enable them to understand the econometric modeling and multicollinearity. CO4- Students will understand the concepts of autocorrelation and heteroscedasticity.							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1	Nature, Meaning and Scope of econometric							CO1
•	Difference between mathematical economics, statistics and econometrics							CO1
•	Methodology of Econometrics							CO1
•	Difference between correlation and regression							CO1
•	Simple linear regression model (Two variables)							CO1
•	Sources of disturbance terms, assumptions, least squares estimators and their properties							CO1
•	Gauss Markov's theorem							CO1
Unit 2	Multiple regression Model							CO2
•	Definition, assumptions, least–squares estimation							CO2
•	Testing significance of regression coefficients, concepts of R2 and R-2							CO2
•	Functional forms: Estimation of quadratic, semi–log and double log functions							CO2

•	simple and compound rates of growth (applications)	CO2
Unit 3	Econometric Modeling	CO3
•	Specification of regression model	CO3
•	Model selection criterion and Diagonistic testing	CO3
•	Multicollinearity: Problem consequences	CO3
•	test to detect Multicollinearity, remedies	CO3
Unit 4	Autocorrelation and Heteroscedasticity	CO4
•	Nature of autocorrelation and heteroscedasticity	CO4
•	Consequences tests	CO4
•	remedies (elementary treatment)	CO4
Text Books	1. Christopher Dougherty. Introductory Econometrics. Oxford University Press. 2012. 2. Gujarti, D. N. Basic Econometrics. Tata McGraw Hill. 2004. 3. Koutsoyiannis, A. Theory of Econometrics. Palgrave Macmillan.2005.	

L	T	P	Credits
4	0	0	4

Course Code	ECN455							
Course Title	**Operations Research**							
Course Outcomes	CO1: Identify the characteristics of linear programming problems. Understand various methods for solving linear programming problems CO2: Solve transportation problems using different methods. CO3: Students will learn to solve the problems related to assignment. CO4: Understand basic concept of game theory and learn the concepts of project management.							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1	Introduction to OR							CO1
•	Operations research in India, nature, scope							CO1
•	limitation and techniques of OR							CO1
•	Duality-Concept of duality in LPP, Formulation of the dual problem							CO1
•	Rules for constructing the dual problem, Primal-Dual relationship							CO1
•	Interpreting the Primal-Dual relationship, -Dual of the Dual is Primal, Dual Simplex, Steps in Dual Simplex							CO1
•	Sensitivity Analysis: Sensitivity analysis, Limitations of Sensitivity analysis							CO1
Unit 2	Transportation Model							CO2
•	Introduction, Optimal solution of Transportation problem							CO2
•	Methods for initial basicfeasible solutions- NWCM, LCM, VAM							CO2
•	Optimality Tests- Stepping stone method, Modified distributionmethod							CO2

•	Degeneracy in Transportation problem	CO2
•	Profit maximization in Transportation problem,	CO2
•	Unbalanced Transportation problems, Trans shipment problem.	CO2
Unit 3	Assignment Model and	CO3
•	Introduction, Mathematical Formulation	CO3
•	Hungarian method [Minimization method, Maximization case in Assignment Problems	CO3
•	Travelling Salesman Problem, Un-balanced Assignment Problem, Air Crew assignment	CO3
•	Prohibited assignment/ Constrained assignment problem, LPP formulationof Assignment Problem	CO3
•	Inventory Control: Meaning, Inventory decisions, Types of Inventory, Factors affecting IC policy	CO3
•	Objectives of IC, Scope of IC, IC systems- P& Q	CO3
•	Inventory Models-Deterministic models (EOQ), Price break approach, Safety stocks- factors & methods, Approaches to IC- ABC, VED.	CO3
Unit 4	Game Theory	CO4
•	Introduction, Types of strategy, The Maximin-Minimax principle	CO4
•	Saddle point, Types of problems-Games with pure strategies	CO4
•	Games with mixed strategies (8 methods), limitations of game theory	CO4
•	Network Analysis- PERT and CPM- Introduction	CO4
•	Objectives of Network Analysis, Applications of Network Model	CO4
•	ActivityTimes & Critical Path Computation of Critical Path Slack & Float	CO4
•	PERT- Steps & computing variance, Merits & demerits of PERT, CPM-Time estimating & Limitations	CO4
•	Project Cost analysis- Direct & indirect costs, The lowest cost schedule, Crashing of jobs, Allocation & leveling of resources (through CPM)	CO4
Text Books	1. Kalavathy, S. *Operations Research*. Vikas Publishing House. New Delhi. 2. Kapoor, V.K. *Operations Research*. Sultan Chand & Sons. New Delhi. 3. Paneerselvam, R. *Operations Research*. Prentice Hall of India. New Delhi 4. Vohra, N.D. *Quantitative Techniques in Management*. Tata McGraw Hill Publishing Company Ltd.	

L	T	P	Credits
4	0	0	4

Course Code	ECN456							
Course Title	Data Analysis							
Course Outcomes	CO1: Students will learn to represent and analysis of data of real-world problems. CO2: Students will learn about statistical software's available for data analysis. CO3: understand visualization and representation using software's. CO4: To understand simple estimation techniques and test.							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1	Introduction to the course							CO1
•	How can the representation and analysis of data help us study real-world problems							CO1
•	Publicly available data sets							CO1
Unit 2	Using Data: Available statistical software							CO2
•	steps in data storage							CO2
•	organization and cleaning							CO2
Unit 3	Visualization and Representation							CO3
•	Alternative forms of presenting data							CO3
•	Alternative forms of summarizing data							CO3
Unit 4	Simple estimation techniques							CO4
•	tests for statistical inference							CO4

Text Books	1. Levine, D., Stephan, D., Szabat, K. (2017). *Statistics for managers using Microsoft Excel*, *8th ed*. Pearson. 2. Tattar, P., Ramaiah, S., Manjunath, B. (2018). *A course in statistics with R.* Wiley.	

L	T	P	Credits
4	0	0	4

Course Code	ECN454							
Course Title	Advanced Econometrics							
Course Outcomes	CO1: Students will understand the concept of dummy variables. CO2: This will help in understanding the Simultaneous Equation Models. CO3: Students will learn Distributed Lag Models. CO4: it will help in understanding basic characteristics of Time Series Data.							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10	10	5	-	25	-	50	-
Syllabus								**CO Mapping**
Unit 1	Dummy Variables							CO1
•	Regression on qualitative and quantitative variables							CO1
•	dummy variable trap							CO1
•	structural stability of regression models							CO1
•	Chow test, piecewise linear regression model							CO1
Unit 2	Simultaneous Equation Models							CO2
•	Simultaneous bias, structural versus reduced form							CO2
•	Identification: rank versus order condition, exact and over identifications							CO2
•	triangular model, methods of estimation including indirect least squares							CO2
•	two-stage least squares and three-stage least squares model							CO2
Unit 3	Distributed Lag Models							CO3
•	Formation of expectations							CO3

•	naïve expectation versus adaptive expectations models	CO3
•	partial adjustment models, distributed lag models	CO3
•	Koyck's model, Almon lag, polynomial distributed lag models	CO3
Unit 4	Basic Characteristics of Time Series Data	CO4
•	Random Walk	CO4
•	Testing for Non stationarity and Stationarity	CO4
•	Unit Root Tests	CO4
Text Books	1. Gujarati, Damodar N. Basic Econometrics. New York: McGraw-Hill. 2007. Print. 2. Wooldridge, Jeffrey M. Introductory Econometrics: A Modern Approach. Peking: Cengage Learning. 2009. Print. 3. Brooks, C. Introductory Econometrics for Finance. Cambridge University Press. 2003. First edition	

In hours			
L	T	P	Credit
0	0	4	2

Course Code	ZOL192			
Course Title	**Apiculture**			
Course Outcomes	On the completion of the course the student will be able to CO1: Comprehend the various species of honey bees in India, their social organization and its importance CO2: Gain thorough knowledge about the techniques involved in bee keeping and bee products such as honey, bee wax, propolis, pollen, bee venom etc. CO3: Identify enemies of honey bees and manage different bee diseases CO4: Develop entrepreneurial skills necessary for self-employment in beekeeping sector			
Examination Mode	Practical			
Assessment Tools	CA	MSP	ETP	Total
Weightage	20	30	50	100
Syllabus				**CO Mapping**
Unit 1	**Biology of Bees**			
•	Study of the life history of honey bees: Apisceranaindica, Apismellifera, Apisdorsata, Apisflorea, Melipona sp. from specimen/ photographs - Egg, larva, pupa, adult (queen, drone, worker).			CO1
•	Study of morphological structures of honey bees through permanent slides/photographs–mouthparts, antenna, wings, sting apparatus and temporary mount of legs (antenna cleaner, mid leg, pollen basket).			CO1
•	Study of natural beehive and identification of queen cells, drone cells and brood.			CO1
Unit 2	**Rearing of Bees**			
•	Distinguishing characters of workers of three bee species.			CO2
•	Importance of site selection for bee keeping.			CO2

•	Study of an artificial hive (Langstroth/Newton), its various parts and beekeeping equipment: draw diagrams of bee boxes proportionate to the body size and measure the body length and wing size.	CO2
•	Preparation of mount of pollen grains from flowers	CO2
Unit 3	**Diseases and Enemies**	CO3
•	Diagnosis of honeybee diseases: Protozoan diseases, Bacterial diseases, Viral diseases (one each)-symptoms, nature of damage and control.	CO3
•	Identification of honeybee enemies: Predators-Insects and non-insects.	CO3
Unit 4	**Bee Economy**	
•	Video demonstration of wax extraction and preparation of comb foundation sheets.	CO4
•	Analysis of honey – purity, physical and biochemical parameters (any two constituents).	CO4
•	Study of bee pasturage – visit to fields/gardens/orchards for studying the beeactivity (role in pollination, nectar collection, videography of honeybee activity) and preparation of herbarium of nectar and pollen yielding flowering plants (floral mapping).	CO4
Text Book/s	1.Singh, S. (1962). Beekeeping in India, Indian Council of Agricultural Research, New Delhi 2. Rahman, A. (2017). Beekeeping in India. Indian Council of Agricultural Research, New Delhi.	
Reference Book/s	1.Mishra, R.C. (1995). Honeybees and their management in India. Indian Council of Agricultural Research,New Delhi. 2. Prost, P. J. (1962). Apiculture. Oxford and IBH, New Delhi 3. Gupta, J.K. (2016). Apiculture, Indian Council of Agricultural Research, New Delhi.	

In hours			
L	T	P	Credit
2	0	2	3

Course Code	CST 192					
Course Title	**Cyber Security**					
Course Outcomes	On the completion of the course the student will be able to CO1: understand the concept of Cyber security and issues and challenges associated with it. CO2: understand the cyber-crimes, their nature, legal remedies and as to how report the crimes through available platforms and procedures CO3: various privacy and security concerns on online Social media and understand the reporting procedure of inappropriate content, underlying legal aspects and best practices for the use of Social media platforms CO4: Understand the basic concepts related to E-Commerce and digital payments. They will become familiar with various digital payment modes and related cyber security aspects, RBI guidelines and preventive measures against digital payment frauds					
Examination Mode	Theory + Practical					
Assessment Tools	Quiz	MSP	ETE	ETP	ABL/PBL	Total
Weightage	10	25	25	35	5	100
Syllabus						**CO Mapping**
Unit 1	*Introduction to Cyber security*					
•	Defining Cyberspace and Overview of Computer and Web-technology, Architecture of cyberspace					CO1
•	Communication and web technology, Internet, World wide web, Advent of internet, Internet society,					CO1
•	Concept of cyber security, Issues and challenges of cyber security.					CO1
Unit 2	*Cybercrime and Cyber law*					CO2
•	Classification of cyber-crimes, Common cyber-crimes- cyber-crime targeting computers and mobiles, financial frauds					CO2

•	Social engineering attacks ,Legal perspective of cyber-crime, IT Act 2000 and its amendments, Cyber-crime and offences	CO2
•	Organizations dealing with Cybercrime and Cyber security in India	CO2
Unit 3	*Social Media Overview and Security*	CO3
•	Introduction to Social networks. Types of Social media, Social media platforms, Social media monitoring, Hashtag, Viral content	CO3
•	Social media privacy, Challenges, Security issues related to social media, Laws regarding posting of inappropriate content.	CO3
Unit 4	*E-Commerce and Digital Payments*	CO4
•	Definition of E- Commerce, Main components of E-Commerce, Elements of E-Commerce security, E-Commerce threats,	CO4
•	Introduction to digital payments, Modes of digital payments- Banking Cards, Unified Payment Interface (UPI), e-Wallets, Aadhar enabled payments, Digital payments related common frauds and preventive measures	CO4
Text Book/s		
Reference Book/s	1. Cyber Crime Impact in the New Millennium, by R. C Mishra, Auther Press. Edition 2010. 2.Cyber Security Understanding Cyber Crimes, Computer Forensics and Legal Perspectives by SumitBelapure and Nina Godbole, Wiley India Pvt. Ltd. (First Edition, 2011) 3. Security in the Digital Age: Social Media Security Threats and Vulnerabilities by Henry A. Oliver, Create Space Independent Publishing Platform. (Pearson , 13th November, 2001) 4. Electronic Commerce by Elias M. Awad, Prentice Hall of India Pvt Ltd. 5. Cyber Laws: Intellectual Property & E-Commerce Security by Kumar K, Dominant Publishers. 6. Network Security Bible, Eric Cole, Ronald Krutz, James W. Conley, 2nd Edition, Wiley India Pvt.Ltd. 7. Fundamentals of Network Security by E. Maiwald, McGraw Hill.	

In hours			
L	**T**	**P**	**Credit**
2	0	0	2

Course Code	MGN 102S					
Course Title	**Design Thinking and Innovation**					
Course Outcomes	On the completion of the course the student will be able to CO1: Understand the concept of design thinking through engaging the students in projects/assignments. CO2:Apply the knowledge to achieve Innovation CO3: develop the essence of ideating the project and solution to the given problems. CO4: Learn About strategy canvas and entering into market with Innovations.					
Examination Mode	Theory					
Assessment Tools	Quiz	Assign.	MSE	ETE	ABL/PBL	Total
Weightage	10	10	25	50	5	100
Syllabus						**CO Mapping**
Unit 1	**The concept of Innovation and its significance in contemporary environment**					1
•	Introducing the concept of design thinking: Constituents of design thinking					1
•	Applied design thinking in business and strategy;					1
•	Analyze the organizational environment for the ideal conditions for insightful thinking					
•	Principals and tools for design Thinking					1
•	Group activity Related to issues/challenges and application of design thinking					1
Unit 2	**Planning and defining design Thinking**					
•	Understanding the concepts of Empathy, Ethnography, Divergent Thinking, Convergent Thinking					2
•	Design Process					

•	Assignment/project for students for developing a new product /service using design process	2
•	Observations and Insights' stakeholders canvas(Direct and Indirect users, influencers, facilitators).	2
•	Class Activity: Listing pain points related to project/assignment as allocated	
•	Meaning and significance of Empathy Phase	2
•	Class Activity: Making the stakeholder canvas and user journey map for the project	
•	Conceptual modeling, developing affinity diagrams using clustering of observations and drawing insights from them.	
•	Developing questions for finalizing the statements for innovative projects.	
Unit 3	**Ideating the project**	
•	Meaning and significance of ideating	3
•	Brainstorming and brain writing for the solution to the given problem;	3
•	Class Activity: brainstorming session of the students for writing the solution to given common campus problem.	
•	Idea menu/ decision matrix/co creation and other creative tools for solution to the given problem/project.	3
Unit 4	**Prototyping and Marketing**	
•	Techniques of prototyping, temporary adjustments for better output,	4
•	Creating user journey map after solving the problem. Class Activity: Students' demonstrating their projects and prototypes	4
•	Meaning and importance of strategy Canvas, types of strategies	4
•	Using strategy canvas to showcase the business strategy	4
•	Issues related to taking the product to the market.	4
•	Relation of marketing strategies with financial strategy	4
•	Class Activity: Showcasing the strategy canvas and marketing roadmap.	4
Text Book/s	1. Design Thinking for Strategic Innovation, Idris Mootee, Wiley 2014. 2. 101 Design Methods: A Structured approach for designing innovation in your Organisation. V.Kumar, Kindle edition, 2012.	
Reference Book/s	1. Design a better Business, Patrick Van der Pijl, Justin Lockitz and Liza Kay Soloman, Wiley, 2016. 2. Innovation as usual: Ho w to help your people bring Great Ideas to life. HBR Press, 2013.	

Recommended Case studies (HBSP)
1. IBM: Design Thinking
2. IVEY Case: General Mills Canada: Building a culture of Innovation
3. Design Thinking and Innovation by Apple.
4. Telenor: Revolutionizing retail Banking in Serbia

In hours			
L	T	P	Credit
0	0	4	2

Course Code	**MED 104**			
Course Title	**Design Thinking**			
Course Outcomes	On the completion of the course the student will be able to CO1: Disseminate the philosophy of design thinking CO2: Information regarding User centric approach and problem and enhance thinking in order to inspect diverse solutions CO3: Sensitize about feasibility, desirability and viability criteria's for selection of Appropriate solution CO4: Educate about different types of prototyping			
Examination Mode	Practical			
Assessment Tools	CA	MSP	ETP	Total
Weightage	20	30	50	100
Syllabus				**CO Mapping**
Unit 1	*Human Centered Design*			
•	Introduction to Human Centered Design, Human centered Phases, Human centered Process, Human Centered Design case study			**CO1**
Unit 2	*Research Methodology (Problem Definition, Information Gathering)*			
•	Design thinking Models & Methodology- General Problem Statement, Random check list, mind mapping Categorization of random check list, Brainstorming of problem areas, Research Methodology- Information gathering-Primary, Secondary Sources, data presentation, Presentation of survey forms, Survey analysis, Drawing Inference			CO2
Unit 3	*Ideation*			
•	SWOT analysis, Vein Diagram (User Desirability, Feasibility, Viability check), Drawing inferences, Translation of inferences into design criteria, specific problem statement, Ideation, free hand sketching drawing of simple forms of products (Isometric views,			CO3

	layout, circuit diagram, Ideation sketches), Ergonomic and aesthetic consideration in design.	
Unit 4	*Prototyping*	
•	Concept validation, evaluation, detailing, Different methods of Prototyping selection of right method of prototyping	CO4
Text Book/s	1. Emrah Yayici, Design Thinking Methodology Book, Amazon Digital Services LLC-Kdp Print Us. 2016. ISBN: 6058603757, 9786058603752 2. Idris Mootee. Design Thinking for Strategic Innovation, Wiley (2017), ISBN: 978-8126572694	
Reference Book/s	1. Harper Perennial, Lateral Thinking: Creativity Step by Step: Reissue edition. 2015 (Perennial Library). 2. John Chris Jones, Design Methods, John Wiley & Sons, David Fulton Publishers, London, 1980, ISBN: 0-471-28496-3 3. Nigel Cross, Design Thinking: Understanding How Designers Think and Work, Berg Publishers (May 15, 2011), ISBN-13: 978-1847886361 4. Tim Brown, Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation, Published September 29th 2009 by Harper Business, ISBN: 0061766089	

In hours			
L	T	P	Credit
1	0	2	2

Course Code	**CSP 191**					
Course Title	**Digital Fluency**					
Course Outcomes	On the completion of the course the student will be able to CO1: Understand the Fundamentals of computers. CO2: Work in Word Processor effectively. CO3: Discover the arena of the Internet and its possibilities. CO4: Effectively communicate through email.					
Examination Mode	Theory + Practical					
Assessment Tools	Quiz	MSE	ETE	ETP	ABL/PBL	Total
Weightage	10	25	35	25	5	100
Syllabus						**CO Mapping**
Unit 1	**Fundamentals of Computer (08 Hours)**					CO1
•	Introduction – Objectives - Computer, Mobile/ Tablet and their application.					
•	Components of a Computer System - Central Processing Unit- Common Input & Output devices- USB ports and Pen Drive - Connecting Power cord, Keyboard, Mouse, Monitor and Printer to CPU.					
Unit 2	**Word Processor (08 Hours)**					CO2
•	Introduction – Objective -Word Processing Basic - Opening Word Processing Package - Title Bar, Menu Bar, - Toolbars & Sidebar.					
•	Creating a New Document - Opening and Closing Documents Opening Documents - Save and Save As - Closing Document.					

•	Using The Help - Page Setup – Print Preview - Printing of Documents - PDF file and Saving a Document as PDF file – Document manipulation & Formatting - Text Selection - Cut, Copy and Paste.	
•	Font, Color, Style and Size selection - Alignment of Text - Undo & Redo - Spelling & Grammar Shortcut Keys.	
Unit 3	**Internet (08 Hours)**	CO3
•	Introduction – Objectives – Internet - protocols: HTTP, HTTPS, FTP, Concept of Internet & WWW - Website Address and URL - Applications of Internet.	
•	Modes of Connecting Internet (Hotspot, Wi-Fi, LAN Cable, Broadband, USB Tethering) - Popular Web Browsers (Internet Explorer/Edge, Chrome, Mozilla Firefox.)	
•	Exploring the Internet - Surfing the web - Popular Search Engines - Searching on Internet.	
Unit 4	**E-mail (06 Hours)**	CO4
•	Introduction -Objectives - Structure - protocols: SMTP, IMAP, POP3 - Opening Email account -Mailbox: Inbox and Outbox.	
•	Creating and Sending a new E-mail - CC – BCC- Replying -Mail Merge Forwarding - attachments – Scheduling – Password Protect – Delete.	
	Skill Developments Activities: (06 Hours) ● Use word processor to prepare Resume ● Draft a covering letter using Word Processor ● Systematically draft different emails ● Prepare a Letter of Internship requisition and send email. ● Install and uninstall a Web Browser and Record the Steps Any other activities, which are relevant to the course.	
Text Book/s		
Reference Book/s	● Fundamentals of Computers, by Rajaraman V , Adabala N ● Fundamentals of Computers by Manoj Wadhwa (Author) ● Fundamentals of Computers by (V. Rajaraman) ● Learning MS-Word and MS-Excel, by Rohit Khurana ● Microsoft Word 2019 Step by Step Joan Lambert (Author) ● MICROSOFT WORD FOR BEGINNERS 2021: LEARN WORD PROCESSING SKILLS by RICHARDSTEVE	

In hours			
L	T	P	Credit
2	0	0	2

Course Code	**CED 100**					
Course Title	**Disaster Preparedness and Planning**					
Course Outcomes	On the completion of the course the student will be able to CO1: To provide basic conceptual understanding of disasters and its relationships with development. CO2: To provide the students with good understanding in various disaster managing steps CO3:To build skills to respond to disasters and gain the knowledge of impacts of disaster on environment and society CO4:To enhance awareness of Disaster Risk Management institutional processes in India					
Examination Mode	Theory					
Assessment Tools	Quiz	MSE	ETE	ETP	ABL/PBL	Total
Weightage	10	25	35	25	5	100
Syllabus						**CO Mapping**
Unit 1	*Introduction*					
•	Definition: Disaster, Hazard, Vulnerability, Resilience, Risks – Natural disasters – Earthquake, Landslide, Flood, Drought, Cyclone etc – Manmade Disasters - Fire, Industrial Pollution, Nuclear Disaster, Biological Disasters, Accidents (Air, Sea, Rail & Road), Structural failures(Building and Bridge), War & Terrorism etc.					CO1
•	Classification Causes, Impacts including social, economic, political, environmental, health, psychosocial, etc. Global trends in disasters: urban disasters, pandemics, complex emergencies, Climate change - Dos and Don'ts during various types of Disasters.					CO1
•	Manmade disasters (industrial pollution, artificial flooding in urban areas, nuclear radiation, chemical spills etc); hazard and vulnerability profile of India, mountain and coastal areas, ecological fragility.					CO2,CO1

Unit 2	*Disaster Impacts*	
•	Disaster impacts (environmental, physical, social, ecological, economical, political, etc;	CO2,CO3
•	health, psycho-social issues; demographic aspects (gender, age, special needs)	CO2,CO3
Unit 3	*Disaster Risk Reduction*	
•	Disaster management cycle – its phases; prevention, mitigation, preparedness, relief and recovery	CO3
•	early warning systems, Post-disaster environmental response (water, sanitation, food safety, waste management, disease control)	CO3,CO4
•	Roles and responsibilities of government, community, local institutions, NGOs and other stakeholders; Policies and legislation for disaster risk reduction, DRR programmes in India and the activities of National Disaster Management Authority.	CO3
Unit 4	*Disaster Management Environment and Development*	
•	Sustainable and environmental friendly recovery; reconstruction and development methods.	CO3
Text Book/s	1.SahniPardeep, "Disaster Risk Reduction in South Asia", Prentice Hall, 2004. 2. Singh B.K., "Handbook of Disaster Management: techniques & Guidelines", Rajat Publication, 2008. 3. Ghosh G.K., " Disaster Management", APH Publishing Corporation, 2006.	
Reference Book/s	1. http://ndma.gov.in/ (Home page of National Disaster Management Authority). 2. http://www.ndmindia.nic.in/ (National Disaster management in India, Ministry of Home Affairs).	

In hours			
L	T	P	Credit
2	0	2	3

Course Code	MGN 101S						
Course Title	**Essentials of Entrepreneurship, Thinking and Action**						
Course Outcomes	On the completion of the course the student will be able to CO1: Gain Knowledge about the concept of entrepreneurship, the various traits, skills and resources required to be a successful entrepreneur. CO2: Examine the legal requirements for various types of firms and its registration process CO3: Acquire knowledge of fundamentals of marketing. This will help them to formulate marketing strategy for their proposed venture. CO4: Acquire knowledge of fundamentals of finance which will help them understand the sources of finance and its utilization and exposure to fundamentals of human resource management. CO5: Apply their learning on generating viable business idea by interviewing prospective customers. CO6: Prepare the business plan on business model canvas with key partners, key resources, key activities, value proposition, customer relations, customer segments and channels.						
Examination Mode	Theory + Practical						
Assessment Tools	Written Quiz	Assignment/ Project Work	MSE	ESP	ESE	EPR	ABL/PBL
Weightage	10	-	25	25	35	-	5
Syllabus							**CO Mapping**
Unit 1	*Fundamentals of Entrepreneurship.*						
•	Creativity and Business Ideas.						CO1
•	Business Idea to opportunity.						CO1
•	Technology Readiness Level.						CO1
•	Legal Aspects of Business.						CO2
•	Practical - Group formation and Exploring of Business Idea.						

Unit 2	*Concepts of Marketing Finance and Human Resource Management*	
•	Marketing Mix: 7 Ps of Marketing.	CO3
•	Segmentation, Targeting and Positioning.	CO3
•	Basics of Finance: Assets-Liabilities, Debt-Equity, P&L Statement- Balance Sheet and Basic Financial Ratio.	CO4
•	Fundamentals of Human Resource Management.	CO4
•	Practical – Discussion on Business Idea	
Unit 3	*Identifying Business Idea and its potentiality*	
•	Generating Business Idea.	CO5
•	Selecting a viable Business Idea.	CO5
•	Practical- Conducting Interview with prospective customers on the business idea finalized.	
Unit 4	*Preparation of Business Plan*	
•	Computing Empathy Map Testing	CO5
•	Preparation of the Business Plan using business model canvas	CO6
•	Practical – Presentation of B-Plan	CO6
Text Book/s	1. Kumar, A., Entrepreneurship: Creating and Leading an Entrepreneurial Organization, New Delhi: Pearson Education, Latest Edition.	
Reference Book/s	1. Roy, R., Entrepreneurship, New Delhi: Oxford University Press., Latest Edition. 2. Jain, P,C., Handbook for New Entrepreneurs, New Delhi: Oxford University Press., Latest Edition.	

In hours			30
L	T	P	Credit
2	0	0	2

Course Code						
Course Title	**Intellectual Property Rights**					
Course Outcomes	On the completion of the course the student will be able to CO1: To understand fundamentals of IPR and to identify the ways to protect their findings of research in form of Patent. CO2: To distinguish, explain various forms of IPRs and the significance of practice and registration procedure of Copyright and trade mark. CO3: To know about other forms of IPR like Industrial Design Right, Plant Variety Rights, Trade Dress and Trade Secret. CO4: Identify procedure to protect different forms of IPRs national and international level.					
Examination Mode	Theory					
Assessment Tools	Quiz	Assign.	MSE	ETE	ABL/PBL	Total
Weightage	10	10	25	50	5	100
Syllabus						**CO Mapping**
Unit 1	**Overview of Intellectual Property and Patent** Introduction and the need for intellectual property right (IPR), Theories on concept of property, Nature (territorial, monopolistic, fixed terms etc.) Public Vs. Private – Tangible Vs. Intangible, Protected v/s open source, open innovation. Patent: - Elements of Patentability: Novelty , Non Obviousness (Inventive Steps), Industrial Application - Non - Patentable Subject Matter - Registration Procedure,					CO1

	Rights and Duties of Patentee, Assignment and license, Restoration of lapsed Patents, Surrender and Revocation of Patents.	
Unit 2	**Copyright and Trademark**	
	Nature of Copyright - Subject matter of copyright: original literary, dramatic, musical, artisticworks; cinematograph films and sound recordings - Registration Procedure, Term of protection,Ownership of copyright, Assignment and license of copyright - Infringement, Remedies & Penalties – Related Rights - Distinction between related rights and copyrights Concept of Trademarks - Different kinds of marks (brand names, logos, signatures, symbols,well known marks, certification marks and service marks) - Non Registrable Trademarks -Registration of Trademarks - Rights of holder and assignment and licensing of marks -Infringement, Remedies & Penalties - Trademarks registry and appellate board.	CO2
Unit 3	**Other forms of IP**	
	Design Design: meaning and concept of novel and original - Procedure for registration, effect ofregistration and term of protection Geographical Indication (GI) Geographical indication:meaning, and difference between GI and trademarks - Procedure for registration, effect ofregistration and term of protection **Plant Variety Protection** Plant variety protection: meaning and benefit sharing and farmers' rights – Procedure forregistration, effect of registration and term of protection Layout Design Protection Layout Design protection: meaning – Procedure for registration, effect of registration and term of Protection	CO3
Unit 4	**International and National Instruments relating to IP**	
•	World Intellectual Property Organization (WIPO) , Functions of WIPO , Membership , GATT Agreement , Major Conventions on IP , Berne Convention , Paris Convention , TRIPS agreement-PCT, The Hague Agreement, Madrid Agreement and Protocol, Budapest Treaty, other international treaties and conventions India`s New National IP Policy, 2016 – Govt. of India step towards promoting IPR – Govt. Schemes in IPR – Career Opportunities in IP - IPR in current scenario with case studies.	CO4

Text Book/s	1.World Intellectual Property Organization. (2004). WIPO Intellectual property Handbook.Retrieved from https://www.wipo.int/edocs/pubdocs/en/intproperty/489/wipo_pub _489.pdf 2.Sidney Diamond, 'Historical Development of Trademarks, (1983) 73 Trademark Representative 222.	
Reference Book/s	1.Ronan Deazley, Martin Kretschmer, Lionel Bently, Privilege and Property: Essays on the History of Copyright (Open Book Publishers 2010). 2.Benedict Atkinson and Brian Fitzgerald, A Short History of Copyright: The Genie of Information (Springer 2014). 3.Ahuja, V K. (2017). Law relating to Intellectual Property Rights. India, IN: Lexis Nexis.	

In hours			
L	T	P	Credit
1	0	4	3

Course Code								
Course Title	LATEX							
Course Outcomes	On the completion of the course the student will be able to CO1: learn LaTex and its features. CO2: learn automatic generation of contents, bibliographies and indexes. CO3: create Mathematical documents using LaTex. CO4: create beamer presentations.							
Examination Mode	Theory+ Practical							
Assessment Tools					**MSE**	**MSP**	**ESE**	**ESP**
	Quiz	**Assignment**	**ABL/PBL**	**Lab Performance**				
Weightage	**10**	**-**	**5**	**-**	**-**	**25**	**25**	**35**
Syllabus								**CO Mapping**
Unit 1	*Introduction to LaTex*							CO1
•	What is Latex, Typesetting, Fonts and Size							CO1
•	Document Class, Page Style, Page Number							CO1
•	Formatting							CO1
•	Hands on practice on above topics							CO1
Unit 2	*Bibliography*							CO2
•	Table of contents, index							CO2
•	list of figures, list of tables							CO2
•	Natbib, Bibliography							CO2
•	Hands on experience on above topics							CO2

Unit 3	*Mathematics Typesetting*	CO3
•	The basics, custom commands, operators, Symbols, Equation	CO3
•	Array, Split equation,	CO3
•	Theorems in Latex, The amsthm package etc.	CO3
•	Hands on experience on above topics	CO3
Unit 4	*Presentation*	CO4
•	Presentations in LaTex	CO4
•	Hands on experience to make presentation	CO4
Text Books	1. J. Erickson, Martin, and Donald Bindner. A Student's Guide to the Study, Practice, and Tools of Modern Mathematics. CRC Press: Boca Raton FL, 2011.Print.	
Reference Books	1. Lamport, L. A Document Preparation System User's Guide and Reference Manual. New York: Addison-Wesley, 1994.Print.	

In hours			
L	**T**	**P**	**Credit**
3	0	0	3

Course Code							
Course Title	**Programming with FORTRAN**						
Course Outcomes	On the completion of course the students will be able to: CO1: To equip the students with the knowledge of basics of computer, algorithm Development and some of the basics of Fortran language. CO2: Students will learn about computer programming with Fortran. CO3: Students will gain information about Arrays, control structures, functions and Subprograms in Fortran.						
Examination Mode	Theory						
Assessment Tools	Written Quiz	SAP	MSE	MTP	ESE	EPR	ABL/PBL
Weightage	10%	10%	25%	-	50%	-	5%
Syllabus							**CO Mapping**
Unit 1	**Computer basics**						
	Computer basics, hardware and software, flowchart, flowchart symbols, computer languages, low level languages, high level languages, FORTRAN language, implicit, constants and variables, declaration of reals and integers, arithmetic expressions, real and integer expressions, some problems due to rounding of real numbers, mixed mode expressions, special functions.						CO1
Unit 2	**Computer programming in FORTRAN**						
	Program preparation preliminaries, Input/output statements, list directed input/output statements, PRINT statement, Control statements, relational operators, logical IF statements, nested IF statements, arithmetic IF statement, DO statement, rules to be followed in utilizing DO loops, REPEAT WHILE structure, subscripted variable, use of multiple subscripts, subscript						CO2

	expressions, DIMENSION statement, FORMAT description for PRINT statement, WRITE statement, multi record For Mats, Logical expressions and decision tables.	
Unit 3	**Functions and subroutines in FORTRAN**	
	Functions, statement functions, function subprograms, syntax rules for function subprograms, subroutines, COMMON declaration, processing files in FORTRAN, creating a sequential file, updating a sequential file, merging two sequential files, direct access files, CHARACTER manipulations in FORTRAN, string expressions, substrings, double precision facility in FORTRAN, use of complex quantities, DATA statement, EQUIVALENCE declaration.	CO3
Reference Books	1. V Rajaramanm, Computer Programming in Fortran 77, PHI Learning Pvt. Ltd., 1997. 2. Ian D Shivers and J Sleight, Interactive Fortran 77, A hands on Approach, Ellis Horwood Ltd; 1990. 3. R.S. Salaria, A Modern Approach to Programming in Fortran, Khanna Publishing Company; 2016.	

In hours			
L	T	P	Credit
2	0	2	3

Course Code						
Course Title	**Python Programming**					
Course Outcomes	On the completion of the course the student will be able to CO1: To acquire programming skills in core Python. CO2: To acquire the skills of using operators and working with control constructs in Python. CO3: To develop the skills of using data types, designing functions & modules in Python. CO4: To acquire object-oriented programming and File handling in Python.					
Examination Mode	Theory + Practical					
Assessment Tools	Quiz	MSE	ETE	ETP	ABL/PBL	Total
Weightage	10	25	35	25	5	100
Syllabus						**CO Mapping**
Unit 1	**Introduction to Python Language**					CO1
•	Programming language, History of Python, Origin of Python Programming, Features, Limitations, Applications, Getting and Installing Python, Python Environment Variables					
•	Python Help, Python differences from other languages.					
•	Keywords, Identifiers, Variables, Statements, Indentation, Documentation, Data Type, Type Conversion.					
•	Python Input and Output.					
Unit 2	**Operators, Expressions and Control Structures**					CO2
•	Arithmetic, Comparison, Assignment, Logical, Bitwise, and Python special operators.					
•	Expressions, Precedence and Associativity.					
•	Decision Making Statements					

•	Python Loops	
•	Python Control Statements	
Unit 3	**Python Functions and Modules**	CO3
•	Creating Functions, Advantages of Functions, Types of Functions, Built-In, User Defined Functions, Anonymous Functions,	
•	Call by Value, Call by Reference, Recursion, Designing of Modules, Importing Modules.	
Unit 4	**Python Class and Objects**	CO4
•	Designing Classes, Creating Objects, Accessing Objects, init method, constructor, garbage collection, destroying objects, inheritance and operator overloading.	
•	File creation, open() and close() methods, read() and write() methods, file modes, file encoding, file object attributes, renaming and deleting files, Python directory, directory methods and functions.	
Text Book/s	1. B. Slatkin, Effective Python, Addison Wesley Professional, 2015. 2. J. M. Zelle, Python Programming: An Introduction to Computer Science, Franklin, Beedle & Associates, Inc., 2004.	
Reference Book/s	1.M. C. Brown, The Complete Reference Python, Osborne/McGraw-Hill, 2001. 2.S. Maruch, A. Maruch, Python for Dummies, John Wiley & Sons, 2011. 3.A. B. Downey, Think Python, O'Reilly Media Inc., 2012.	

Practical Syllabus

Implementation of Python programs: Control Structures, Lists, Tuples, Strings, Dictionary, Sets, Files, Exception handling, Classes and Objects, Inheritance, Overloading, etc

In hours			
L	**T**	**P**	**Credit**
2	0	2	3

Course Code						
Course Title	**Data Analytics**					
Course Outcomes	On the completion of the course the student will be able to CO1: Understand the Basics of Data Analysis and Python Programming. CO2: Explain the strategies of data collection and implement quantitative and graphical techniques in Data Analysis. CO3: Understand Statistics and Visualization methods. CO4: Understand the Security and Privacy issues, and future trends in Data Science.					
Examination Mode	Theory + Practical					
Assessment Tools	Quiz	MSE	ETE	ETP	ABL/PBL	Total
Weightage	10	25	35	25	5	100
Syllabus						**CO Mapping**
Unit 1	***Fundamentals of Data Analytics and Python***					
•	*Introduction: Data Science and Data Analytics; Different areas using data science.*					CO1
•	*Data Categorization: NOIRClassification-Nominal scale, Ordinal scaleInterval and ratio-scale, Multidimensional DataModel.*					CO1
•	*Python Fundamentals: Introduction, Basic Numeric operations, Data types, Modules, Library*					CO1
Practical	*1. Setting up of Python Environment and interface information.*					CO1
•	*2. Importing various libraries.*					CO1
•	*3. Mathematical computing with Python.(numpy)*					CO1
Unit 2	***Data Management***					
•	*Process of Data Analytics.*					CO2

•	*EDA(Exploratory Data Analysis)and its types.*	CO2
•	*Data Mining: Feature Generation and Feature Selection, user retention, Feature Selection algorithm.*	CO2
Practical	1. *Data Manipulation with Pandas.*	CO2
	2. *Prediction with scikit-learn.*	CO2
Unit 3	***Statistics and DataVisualization***	
•	*Statistics: Introduction, Data Summarization-Measurement of Central Tendency (mean, mode median etc.) and Dispersion(Range, Variance and standard deviation).*	CO3
•	Data Visualization: Importance of Data Visualization, Tools and techniques for Data Visualization.	CO3
Practical	1. Implementation of central tendency and dispersion operation.	CO3
	2. Interactive Data Visualization in python.	CO3
	3. *Statistical Data visualization.*	CO3
Unit 4	**Security Issues and Future trends in Data Science**	
•	Ethical issues, Security and privacy issues	CO4
•	*Future generation Data Scientist*	CO4
•	*Challenges in Data Analytics*	CO4
•	*Recent Trends in Data Science and Applications of Data Science*	CO4
Text Book/s	1.V.K. Jain, Data Science and Analytics(with Python, R and SPSS Programming), Khanna Publishing 2.Joel Grus, Data Science from scratch, Shroff Publisher.	
Reference Book/s	1. Parag Kulkarni, Sarang Joshi, Meta S. Brown, Big Data Analytics, PHI Learning. 2. Anil Maheshwari, Data Analytics, McGrawHill. 3.Fabio Nelli, Python Data Analytics: Data Analysis and science using Pandas, matplotlib and the python programming language, Apress. 4. Peters Morgan, Data Analysis from scratch with Python,	

In hours			
L	T	P	Credit
2	0	2	3

Course Code	CST 194					
Course Title	**Fundamental of Computer Programming & IT(FCPIT)**					
Course Outcomes	On the completion of the course, the student will be able to CO1: Understand basics of computer, its parts and basics of OS. CO2: Interpret the basic programming concepts & program execution CO3: Implement arrays & functions in programming CO4: Work with pointers& structures					
Examination Mode	Theory + Practical					
Assessment Tools	Quiz	MSE	ETE	ETP	ABL/ PBL	Total
Weightage	10	25	35	25	5	100
Syllabus						**CO Mapping**
Unit 1	**Introduction to Computers**					
•	Computer System, Block diagram of a Computer System and its working. Classification and generation of computers.					CO1
•	Number system, I/O devices and types of memories.					CO1
•	Computer Hardware, Software and Firmware Types of Software, Operating Systems, their types and functions. Booting and its types.					CO1
•	Computer Network: Types of network and networking devices.					CO1
•	Practical: - 1. Installation of any operating system. 2. Creation of any social account (Microsoft, Google etc.).					CO1
Unit 2	**Introduction to Algorithms & Programming**					
•	Definition & Representation of Algorithm & Flowchart with examples.					CO2
•	Generation of programming languages					CO2

•	Basic Constructs of C: Keywords, Identifiers, Variables, Data Types and their storage, Various Operators and Expressions, External Variables and Scope of Variables,	CO2
•	Structure of C Program and stages of compilation of C program. Control Structures, Decision making statements.	CO2
•	Practical: -1. Implementation of program related to the basic constructs in C. 2.Implimentation of Decision making Statements (if, if else, if-else-if, switch-case) 3.Implimentation of loop control statements (for loop, while and do while loop)	C02
Unit 3	**Arrays and Functions**	
•	Functions, Advantages of functions, Parts of function (Function prototype, declaration and definition)	CO3
•	Return statement, call by value and call by reference, recursion.	CO3
•	Arrays: Introduction to arrays, declaring & defining arrays. Storage classes: Introduction & its types.	CO3
•	Strings: definition, declaration & various string manipulation functions.	CO3
•	Practical: 1. Programs using functions by passing values using call by value and call by reference method. 2.Program to illustrate the use of arrays and strings.	CO3
Unit 4	Pointers and Structures	
•	Introduction to Pointers, declaration of pointers and its types (Null pointer, wild pointer, dangling pointer, void pointer).	CO4
•	Introduction to Structures, declaring & defining structures, Introduction to Union, Structure vs union.	CO4
•	Practical: 1. Program to illustrate the use of pointers and structures.	C04
Text Books	1.Anita Goel: “Computers Fundamentals”, Pearson Publications 2. E. Balaguruswamy, Programming in ANSI C, Tata McGraw-Hill	CO1 CO2, CO3, CO4
Reference Books	1.V.K. Jain: “Fundamentals of Information Technology and Computer Programming”, PHI. Latest Edition.	CO1

	2.Brian Kernighan and Dennis M. Ritchie: “The C Programming language”, Prentice Hall, 2nd Edition 2007. 3.Computer Concepts and Programming in C, R.S. Salaria, Khanna Publishing	CO2, CO3, CO4 CO1, CO2, CO3, CO4

In hours			
L	T	P	Credit
2	0	2	3

Course Code	EVS104							
Course Title	Environment Studies							
Course Outcomes	On the completion of the course the student will be able to: CO1: Understand the interconnected and interdisciplinary nature of environmental studies and develop critical thinking skills in relation to environmental affairs. Acquire knowledge about the depletion of the root cause of natural resources and their effective management. CO2: To aware about the ecosystems, biodiversity and its importance to mankind. Interpret and propose solutions to various environmental pollution, solid waste and disaster management. CO3: Expand awareness of self in a global society and effectively engage diverse perspectives, values, and cultures, ranging from local to global in dealing with environmental and social issues. CO4: Awareness about effect of population increase on humans itself. Causes of spread of different diseases in society. How Indian government is supporting women and children that considered weakest section of society.							
Examination Mode	Theory + Practical							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10%	-	5%	-	25%	-	35%	25%
Syllabus								**CO Mapping**
Unit 1	***Introduction to Environmental Studies, Natural Resources and Ecosystem***							1
•	The multidisciplinary nature of environmental studies							1
•	Natural Resources: Renewable and non-renewable resources.							1
•	Forest resources: Use and over-exploitation							1
•	Water resources: Over-utilization of surface and ground water							1
•	Mineral resources: Use and exploitation, environmental effects of mining							1
•	Food resources: Effects of modern agriculture on environment							1
•	Energy resources: renewable and non-renewable energy sources.							1
•	Land resources: Uses and land degradation, soil erosion							1
•	Ecosystem: Structure and function of an ecosystem. Producers, consumers and decomposers							1
•	Energy flow in the ecosystem, Ecological succession							1
•	Food chains, food webs, ecological pyramids							1
Unit 2	***Biodiversity and Environmental Pollution***							
•	Biodiversity definition. Genetic, species and ecosystem diversity. Bio-geographical classification of India.							2
•	Value of biodiversity. India as mega-diversity nation. Hot-spots of biodiversity.							2

•	Threats to biodiversity. Man wildlife conflicts. In-situ and Ex-situ conservation of biodiversity.	2
•	Environmental Pollution: Definition, causes, effects and control measures of: Air pollution**,** water pollution, soil pollution, marine pollution, noise pollution, thermal pollution, nuclear pollution	2
•	Solid waste management and techniques.	2
•	Disaster management: floods, earthquake, cyclone and landslides.	2
Unit 3	***Social Issues, Human Population and Environment***	
•	Sustainable Development: From unsustainable to sustainable development. Urban problems related to energy.	3
•	Water conservation: Rain water harvesting and watershed management. Resettlement and rehabilitation of people	3
•	Environmental Issues: Climate change, global warming, acid rain, ozone depletion, nuclear accidents and holocaust.	3
•	Wasteland reclamation. Consumerism and waste products.	3
•	Environmental Laws: The Environment Protection Act, 1986; The Air Act, 1981; The Water Act, 1974; The Wildlife Protection Act, 1972; Forest Conservation Act, 1980.	3
•	Human Population and Environment**:** Population growth and population explosion, causes and effects	3
•	HIV/ AIDS	3
•	Women and child welfare programmes in India	3
•	Role of IT in environment and human health.	3
Unit 4	***Practical's and field study***	
•	Visit to sewage treatment plant and rain water harvesting system	4
•	Solid waste management by vermi-composting and biogas plant	4
•	Visit to incineration plant of your area.	4
•	A visit to pond, river and lake ecosystem	4
•	Visit to different industries with respect to pollution	4
•	Testing of water parameters: Hardness, pH, Conductivity, Total dissolved solids, Total suspended solids, BOD and DO	4
•	Study of plants in their natural habitat	4

Text Book/s	1. Garg, S. K. Sewage Disposal and Air Pollution Engineering. Khanna Publishers, Delhi, 2003. 2. Botkin, D.B. and Kodler, E.A. Environmental Studies: The Earth as a living planet. New York: John Wiley and Sons Inc., 2000. 3. Odum, E.P. *Basic Ecology*. Japan: Halt Saundurs, 1983. 4. Oliver, S. O. and Daniel, D. C. Natural Resource Conservation: Management for a Sustainable future. Prentice Hall International, New Jersey, 1990. 5. Rai, G. D. Non-Conventional Energy Sources, Khanna Publishers, Delhi, 1993. 6. Sharma, P. D. Ecology and Environment. Meerut Rastogi Publications, 2004. 7. Singh, J.S., Singh, S.P. and Gupta, S. R. Ecology, Environment and Resource Conservation. New Delhi: Anamaya Publishers, 2006. 8. Smith, R.L. (1996). Ecology and Field Biology, Harper Collins, New York, 1996.	
Reference Book/s	1. Alloway, B. J. and Ayres, D.C. Chemical Principles of Environmental Pollution. Blackie Academic and Professional, London, 1997. 2. Botkin, D.B. and Keller, E.A. Environment Science: Earth as a Living Planet, John Wiley & Sons Inc., New York, 2004. 3. Chapman, J. L. and Reiss, M. J. Ecology: Principles and Applications. Cambridge University Press, UK, 1998. 4. De, A.K. Environmental Chemistry. New Delhi: Wiley Eastern Ltd., 1990. 5. Muller-Dombols, D. and Ellenberg, H. Aims and Methods of Vegetation Ecology, Wiley, New York, 1974. 6. Singh, J. S. Restoration of Degraded Land: Concepts and Strategies. Rastogi Publications, Meerut, 1993. 7. Wright, R. T. and Nebel, B. J. Environmental Science, 8th Ed. Prentice Hall India Ltd., 2004.	

In hours			
L	T	P	Credit
2	1	0	3

Course Code	HVE 101							
Course Title	`Human Values and Ethics							
Course Outcomes	On the completion of the course the student will be able to CO1: Development of a holistic perspective based on self – exploration about themselves (human being), family, society and nature/existence. CO2: Understanding (or developing clarity) of the harmony in the human being, family, society and nature/existence CO3: Strengthening of self-reflection. CO4: Development of commitment and courage to act.							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10%	10%	5%	-	25%	-	50%	-
Syllabus								**CO Mapping**
Unit 1	**Course Introduction - Need, Basic Guidelines, Content and Process for Value Education and Understanding Harmony in the Human Being – Harmony in Myself!**							
•	Purpose and motivation for the course, recapitulation from Universal Human Values -1, Self – Exploration – what is it? – its content and process; 'Natural Acceptance' and Experiential Validation – as the process for self – exploration.							1
•	Continuous Happiness and Prosperity – A look at basic Human Aspirations.							1
•	Right understanding, Relationship and Physical Facility – the basic requirements for fulfilment of aspirations of every human being with their correct priority.							1
•	Understanding the needs of Self ('I') and 'Body' – happiness and physical facility.							1
•	Understanding the characteristics and activities of 'I' and harmony in 'I'.							1
•	Understanding the harmony of I with the Body : Sanyam and Health; correct appraisal of Physical needs, meaning of Prosperity in detail.							1

Unit 2	**Understanding Harmony in the Family and Society – Harmony in Human – Human Relationship**	
•	Understanding values in human- human relationship; meaning of Justice (nine universal values in relationships) and program for its fulfilment to ensure mutual happiness; Trust and Respect as the foundational values of relationship.	2
•	Understanding the detailed meaning of Trust and Respect: Difference between intention and competence, Understanding the meaning of Respect, Difference between respect and differentiation; the other salient values in relationship.	2
•	Understanding the harmony in the society (society being an extension of family): Resolution, Prosperity, fearlessness (trust) and co – existence as comprehensive Human Goals.	2
Unit 3	**Understanding Harmony in the Nature and Existence – Whole existence as Coexistence**	
•	Understanding the harmony in the Nature.	3
•	Understanding Existence as Co – existence of mutually interacting units in all- pervasive space.	3
•	Holistic perception of harmony at all levels of existence.	3
•	Include practice sessions to discuss human being as cause of imbalance in nature (film “Home” can be used), pollution, depletion of resources and role of technology etc.	3
Unit 4	**Implications of the above Holistic Understanding of Harmony on Professional Ethics**	
•	Basis for Humanistic Education, Humanistic Constitution and Humanistic Universal Order	4
•	Competence in professional ethics : a. Ability to utilize the professional competence for augmenting universal human order b. Ability to identify the scope and characteristics of people friendly and eco- friendly production systems, c. Ability to identify and develop appropriate technologies and management patterns for above production systems.	4
•	Case studies of typical holistic technologies, management models and production systems	4
•	Sum up.	4

Text Books	1. Human Values and Professional Ethics by R R Gaur, R Sangal, G P Bagaria, Excel Books, New Delhi, 2010 2. Satyarth Prakash, Maharishi Dayanand	
Reference Books	1. Jeeban Vidya: EkParichaya, A Nagaraj, Jeevan Vidya Prakashan, Amarkantak, 1999. 2. Human Values, A.N. Tripathi, New Age Intl. Publishers, New Delhi, 2004. 3. The Story of Stuff (Book). 4. The Story of My Experiments with Truth – by Mohandas Karamchand Gandhi. 5. Small is Beautiful – E. F Schumacher. 6. Slow is Beautiful – Cecile Andrews 7. Economy of Permanence – J C Kumarappa 8. Bharat Mein Angreji Raj – PanditSunderlal 9. Rediscovering India – by Dharampal 10.Hind Swaraj or Indian Home Rule – by Mohandas K. Gandhi 11.India Wins Freedom – Maulana Abdul Kalam Azad 12. Vivekananda – Romain Rolland (English) Gandhi – Romain Rolland (English)	

In hours			30
L	T	P	Credit
2	0	0	2

Course Code								
Course Title	Gender Sensitisation							
Course Outcomes	On the completion of the course the student will be able to CO1: Develop an understanding about gender inequalities and their adverse effects on women as well as men. CO2: Differentiate between biological sex and socially constructed gender; which will help them to break the gender stereotypes and become a better citizen. CO3: Define and understand gender based violence. CO4: Understand the legalities of sexual harassment.							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10%	10%	5%	-	25%	-	50%	-

Syllabus		**CO Mapping**
Unit 1	*Gender Inequality and its Impact on Men and Women*	
•	Understanding the Notion of Citizenship	1
•	Violation of Women's Rights as Citizens and Individuals	1
•	Nature of Gender Inequalities	1
•	Access to and Control over Resources and Positions of Power	1
Unit 2	*Understanding patriarchy*	
•	Biological Sex and Socially Constructed Gender	2
•	Femininity and Masculinity	2
•	Gender Stereotypes and their Impact; Breaking the Stereotypes	2
•	Gender Equality as Liberation of Men as well as Women	2
Unit 3	*Understanding Violence*	

•	Understanding sexual harassment as gender-based violence	3
•	Nature, victims, causes and impact of gender-based violence	3
•	Violence by men against men	3
•	Impact of violence	3
Unit 4	*Contributing to Prevention of Sexual Harassment*	
•	What is and is not Sexual Harassment	4
•	Supreme Court Judgements, and the provisions in the Act of 2013 about prevention of Sexual Harassment	4
•	Preconditions for Effective Working of Sexual Harassment Complaints Committees	4
•	Role of men in prevention of sexual harassment at workplace e. Gender sensitive language, work culture and workplace	4
Reference Book/s	1. Bhasin, Kamla, 'Gender Basics, What is Patriarchy?' Delhi, Women Unlimited, 1993. 2. Bhasin, Kamla, and Khan S Nighat, 'Gender Basics, Feminism and its Relevance in 5 South Asia', Delhi: Women Unlimited, 1999. 3. Bhasin, Kamla, 'Gender Basics, Exploring Masculinity', Delhi: Women Unlimited, 2004. 4. Bhasin, Kamla, 'Gender Basics, Understanding Gender', Delhi: Women Unlimited, 2000. 5. Bhasin, Kamla, 'Bhala yeh jodar kya hein?' (Hindi), Delhi: Jagori, 2000. Connell, Robert W. Masculinities, Cambridge: Polity Press, 2005. 6. Jaysing, Indira (2004) Ed. Law Relating to Sexual Harassment at the Workplace, Universal Law Publishing Company, Delhi. 7. SAKSHAM: Measures for Ensuring the Safety of Women and Programmes for Gender Sensitization on Campuses, UGC, New Delhi. December 2013. 8. Brod, Harry and Kaufman, Michael. 1994. Theorizing Masculinities, Sage Publications. Thousand Oaks. 9. Supreme Court Guidelines for preventing sexual harassment at the workplace. 1997 (Vishaka guidelines). 10. Supreme Court judgement in Apparel Export Promotion Council vs. A.K. Chopra 1999. 11. The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013.	

In hours			
L	**T**	**P**	**Credit**
2	0	0	2

Course Code								
Course Title	Professional Ethics							
Course Outcomes	On the completion of the course the student will be able to CO1: Understanding the basic Terminology and Professional Ethics. CO2: Adopt the qualities of Professionalism and application of Related Theories. CO3: Acquire knowledge of Ethical Codes and Audit under different situations. CO4: Understand the Emerging Issues in Professional Ethics related to different Industries.							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10%	10%	5%	-	25%	-	50%	-

Syllabus		**CO Mapping**
Unit 1	**Basic Terminology and Introduction to Professional Ethics**	1
•	Ethics, Moral and Morality, Values, Emotional Intelligence	1
•	Indian and Global Thoughts on Ethics.	1
•	Personal & Professional Ethics, Ethical Egoism, Governing Ethics	1
•	Ethical Dilemmas, Dimensions of Ethics	1
Unit 2	**Professionalism and Theories of Ethics**	
•	Professionalism: Characteristics, Responsibilities, Competencies, Expectations	2
•	Professional Risks, Professional Accountabilities, Professional Success	2
•	Theory of Deontology, Utilitarianism	2
•	Virtue Theory, Rights Theory, Casuist Theory,	2
Unit 3	**Ethical Codes and Audit**	
•	Need for Ethical Codes	3
•	Professional Codes in Practice	3
•	Need for Ethics Audit	3
•	Benchmarking and Procedure for Ethics Audit	3
•	Issues related to Ethical Profiles of Organizations	3
•	Factors/ considerations for Ethical Audit for Manufacturing and Service Organizations	3
Unit 4	**Ethical issues and Practices.**	
•	Emerging Ethical issues in MNC's	4
•	Business Ethics: Corporate Transparency, Finance and Accounting,Marketing, CSR	4
•	Environmental and Bio Ethics; Sustainable Ecosystem, Energy concerns	4

•	Research Ethics: Responsible Authorship, Reviewing & Editing	4
Text Book/s	1. Professional Ethics: R. Subramanian, Oxford University Press, 2013 2. Professional Ethics and Human Values: M Govindarajan; S. Natarajan; V.S. Senthil kumar . PHI Learning Pvt. Ltd. 2013.	
Reference Book/s	1. Ethics in Engineering Practice & Research, Caroline Whitbeck, 2e, Cambridge University Press 2015. 2. Business Ethics concepts & Cases: Manuel G Velasquez, 6e, PHI, 2008. 3. Professional Ethics and Human values : R.S. Naagarajan: New age Publication house.	

Recommended Case studies
1. : I phone-Ethical Concern and Dilemma
2. : Ethics for Professional and Directors (Manfold Toy Company)
3. : Maggi Ban in India(Nestle)
4. ***: Green Initiatives by COCA COLA***
5. : Bhopal Gas Tragedy

In hours			
L	**T**	**P**	**Credit**
2	0	0	2

Course Code								
Course Title	Sustainable Development							
Course Outcomes	On the completion of the course the student will be able to CO1: How sustainable development came in existence and its need. To Learn about the economic, social, and environmental aspects of sustainability and about various conventions and policies on sustainability. CO2: understand the need of sustainable development goals at national and international level to progress towards sustainable society. At what extent the sustainability is achieved and what need to plan to achieve. CO3: Explore the major impacts that human activities on the environment and various obstacles for not achieving sustainability. CO4: To able to rationalize the sustainability based on scientific merits							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10%	10%	5%	-	25%	-	50%	-
Syllabus								**CO Mapping**
Unit 1	**Introduction to sustainable development**							
•	Introduction to Sustainable Development (SD): Glimpse into History of SD - its importance, need, impact and implications.							1
•	Social, ecological and economic symptoms of unsustainable development							1
•	Rio summit / Earth Summit,1992 and outcome							1
•	Brundtland's Commission, 1987 and outcome							1
•	Challenges for Sustainable Development. Multilateral environmental agreements and protocols. Clean Development Mechanism(CDM)							1
•	Conservation and Sustainable Development							1
Unit 2	**Sustainable Development goals**							
•	Introduction to Sustainable Development Goals (SDGs): The origin, development and idea of the SDGs							2
•	Scale and Scope of the SDGs, A Brief History of the SDGs. 17 Goals of sustainable development							2
•	Millennium Development Goals (MDGs)							2
•	From the MDGs to the SDGs: Agenda 2030							2
•	Planning of Government to Achieve SDGs							2
•	Sustainable development goals in India. Sustainable Development Goals Report 2020.							2

Unit 3	**Environmental Sustainability**	
•	Present and Past: An introduction to today's major environmental issues: Global warming, Acid rain, Ozone depletion, habitat loss, biodiversity loss, sea level rise, deforestation, eutrophication, and ecosystem toxicity	3
•	Sustainable Energy Resources: Renewable energy for sustainable development. Natural resources and sustainable development. International efforts for conservation of resources.	3
•	Climate Change: Introduction to climate change and green house effect. Climate change a threat to Sustainable Development. Adaptation to Current and Future Climate Regimes. Mitigating Climate Change. International Legal and Policy Framework to Address Climate Change: United Nations Framework Convention on Climate Change (UNFCCC).	3
•	Obstacles in environmental sustainability: Population Growth, Disparity in use of resources, unsustainable lifestyle, unethical behavior of human beings	3
Unit 4	Environment Management standards and Socio eco - system	
•	ISO 14000 series, life cycle analyses- scope and goal, biomimicking, environmental impact assessment-procedures of EIA in India.	4
Text Book/s	1. Bhatt, S. (2004). Environment Protection and Sustainable Development. APH Publishing, New Delhi. 2. Chautervedi, .P. (2003). Energy, Environment and Sustainable Development. Concept Publishing Company, New Delhi. 3. Clayton, B. D. and Bass, S. (2002). Sustainable Development Strategies- A Resource Book. Earth scan Publications Ltd, London. 4. Fulekar, M. H., Pathak, B. and Kale, R. K. (Eds.). (2014). Environment and Sustainable Development. Springer, India. 5. Hardy, J.T. (2003). Climate Change: Causes, Effects, Solutions. Wiley & Sons, USA. 6. Harris, F. (2004). Global Environmental Issues. Wiley & Sons, Inc., USA. 7. Joshi, P. C. and Joshi, N. (2009). A Text Book of Environmental science. A.P.H. Publishers, New Delhi. 8. Oliver, S. O. and Daniel, D. C. (1990). Natural Resource Conservation: Management for a Sustainable Future. Prentice Hall International, New Jersey. 9. Sharma, P.D. (2004). Ecology and Environment. Rastogi Publications, New Delhi.	
Reference Book/s	1. Aswathanarayana, U., Harikrishnan, T. and Thayyib Sahini, K.M. (2010).Green Energy Technology: Economics and Policy. CRC Press, USA. 2. Bowers, J. (1997). Sustainability and Environmental Economics. Addison Weley Longman Ltd, Singapore. 3. Coley. D. (2008). Energy and Climate Change Creating a Sustainable Future. John Wiley and Sons Ltd., UK. 4. Hanley, N., Jainson, F. S. and Ben, W. (1999). Environmental Economics – In Theory and Practice. Macmillan India Ltd, New Delhi. 5. Mulder, K. (2006). Sustainable Development for Engineers – A Handbook and Resource Guide, Green Leaf Publishing, Uttar Pradesh,	

	India. 6. Townsend, C. R. (2007). Ecological Applications: Toward a Sustainable World. Wiley-Blackwell, USA. 7. Turner, K.R., Pearce, D.W. and Bateman, I. (1993). Environmental 6. Economics – An Elementary Introduction. The Johns Hopkins University Press, Baltimore.	

In hours			
L	T	P	Credit
2	0	0	2

Course Code	**BCEXXX**							
Course Title	**GREEN TECHNOLOGIES**							
Course Outcomes	On the completion of the course the student will be able to CO1: To understand the sources of energy and present scenario in India. CO2: To understand the sustainable development through present and future energy system. CO3: To understand the different criteria for green building and green roads. CO4: To understand the basic of green chemistry and green Nano-materials used in construction							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10%	10%	5%	-	25%	-	50%	-
Syllabus								**CO Mapping**
Unit 1	INTRODUCTION							
•	Introduction to nexus between Energy, Environment and Sustainable Development; Energy transformation from source to services;							1
•	Energy sources, sun as the source of energy; biological processes; photosynthesis; food chains, classification of energy sources, quality and concentration of energy sources							1
•	Fossil fuel reserves - estimates, duration; theory of renewability, renewable resources; overview of global/ India's energy scenario							2,1
Unit 2	GAS EMISSION & GREEN COMPOSITES							
•	Greenhouse gas emissions, impacts, mitigation and adaptation; future energy Systems- clean/green energy technologies							3
•	International agreements/conventions on energy and sustainability - United Nations Framework Convention on Climate Change (UNFCC); sustainable development							2
•	Utility of Solar energy in buildings concepts of Solar Passive Cooling and Heating of Buildings. Green Composites for buildings							2
Unit 3	GREEN BUILDING CONCEPT							
•	Urban Environment and Green Buildings. Green Cover and Built Environment. Green roads and its construction procedure.							3,4
•	Introduction to Green Chemistry: Principles of Green Chemistry, Reasons for Green Chemistry (resource minimization, waste minimization, concepts)							3
Unit 4	NANOMATERIALS FOR GREEN BUILDINGS							
·	Green reactions solvent free reactions, Catalyzed (heterogeneous/homogeneous)							4

	reactions, MW/ Ultrasound mediated reactions, Bio catalysts etc	
·	Introduction to nanomaterial's: Nanoparticles preparation techniques, Nanomaterial's for "Green" Systems: Green materials, including biomaterials	4
Text Book/s	1. Energy and the Environment, 2nd Edition, John Wiley, 2006, ISBN:9780471172482; Authors: Ristinen, Robert A. Kraushaar, Jack J. A Kraushaar, Jack P. Ristinen, Robert A., Publisher: Wiley, Location: New York, 2006. 2. Energy and the Challenge of Sustainability, World Energy assessment, UNDP, N York, 2000. 3. K.S.Jagadish, B. U. Venkatarama reddy and K. S. Nanjundarao. Alternative Building Materials and Technologies. New Age International, 2007. 4. Low Energy Cooling For Sustainable Buildings. John Wiley and Sons Ltd, 2009. 5. Paul T.Anastas and John C. Warner, Green Chemistry: Theory and Practice, Oxford University Press, USA (2000) 6. Nano materials, nano technologies and design: an introduction for engineers By M. F. Ashby, Daniel L. Schodek, Paulo J. S. G. Ferr	

In hours			
L	T	P	Credit
2	0	0	2

Course Code								
Course Title	General Studies and Current Topics							
Course Outcomes	On the completion of the course the student will be able to CO1: To aware the students about the Indian Polity and Governance. CO2: To provide opportunity to the students to study interdisciplinary subjects like History, Geography, Economy etc. CO3: To make the students understand and use various discoveries and inventions of science and technology. CO4: To aware the students about different types of sports events and other sources of recreation.							
Examination Mode	Theory							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10%	10%	5%	-	25%	-	50%	-
Syllabus								**CO Mapping**
Unit 1	Indian Constitution							
•	Preamble, Salient Features, fundamental Rights, Fundamental Duties, Values enshrined in the Constitution: Liberty and Equality, Union Government, Union Legislature, Executive, State Government, Judiciary.							1
•	Election Commission of India- Its formation, Appointment, Qualification, Tenure, Removal, Powers and Duties, Salary, Allowances and Parks.							1
•	Panchayath Day System							1
•	RTI							1
•	Vigilance Commission							1
Unit 2	Indian Economy, Geography and History							
•	Indian Economy- Pattern, DBJ, SEBJ, Liberalization, Privatization and Globalization, Inflation, Decision, Major Economic Treaties, Economic Terminology							2
•	Indian Geography- Location, Area and Dimensions, Indian States and Union Territories, Crops, Industrial Products, Important Sites and Monuments, largest, Longest and Highest in India.							2
•	Indian History- Glimpses, Ancient India, Medieval India, Modern India, Indian National Movement, Prominent Personalities.							2
•	Punjab History- Naming of Punjab, Major Events, Important Personalities, Sikh Gurus, Crops and industrial products of Punjab.							2
Unit 3	General Science							
•	General Appreciation and understanding of Science.							3

•	Science in everyday use.	3
•	Scientific attitude to life	3
•	Important inventions and discoveries.	3
•	Important Scientists of India and their contribution	3
•	ISRO	3
Unit 4	Sports and Recreation	
•	Importance of Sports	4
•	Major Sports	4
•	Major Sports Competitions: Olympics, World Competitions, Common Wealth Games, FIFA, etc.	4
•	Awards and Honors	4
•	Major Festivals and there importance	4
•	Arts and Artists.	4
•	Books and Authors	4
•	Persons in the News	4
Text Books	1. General Studies for Civil Services, Mc Graw Hill 2. General Studies 2024, by Tarun Goyal. 3. Fundamentals of General knowledge by Disha Publications 4. Lucent General knowledge 2024 by DVK Rao	
Reference Books	1. Advanced General Knowledge- Dr. R. S. Aggarwal, S. Chand and Company 2.Concise General Knowledge Manual- S. Sen, Unique Publishers 3. Encyclopaedia of General Knowledge and General Awareness by R. P. Verma, Pengiun Book Ltd. 4. General Knowledge Manual by Edgar Thorpe and Showick Thrope, the Pearson 5. India 2022, Government of India (Ministry of Information and Broadcasting) Publication Division. 6. Manorama Yearbook -2022, Mammen Mathew, Malayala Manorama Publishers. 7. Spectrum handbook of General Studies, Spectrum Books (p) Ltd. Magazines: 1. Economic and Political Weekly 2. Yajna 3. The Week 4. Frontlines 5. Spectrum 6. Civil Services Chronicle 7. World Atlas Book Newspapers: 1. The Hindu 2. The Times of India 3. The Tribune 4. The Hindustan Times	

In hours			
L	T	P	Credit
1	0	2	2

Course Code	NSS 100							
Course Title	NSS (Skill Based Course)							
Course Outcomes	On the completion of the course the student will be able to CO1: To enable NSS volunteers to undergo a formal course of study so as to supplement their voluntary work CO2: To equip NSS volunteers with some necessary skills to volunteer better CO3: To achieve holistic development of NSS volunteer CO4: To help NSS volunteers to look for other avenues of livelihood in the form of entrepreneurial ventures							
Examination Mode	Theory + Practical							
	Continuous Assessment				MSE	MSP	ESE	ESP
Assessment Tools	Quiz	Assignment	ABL/PBL	Lab Performance				
Weightage	10%	-	5%	-	-	20%	35%	30%
Syllabus								**CO Mapping**
Unit 1	**Introduction to NSS**							1
•	Introduction to NSS History, philosophy, aims and objectives of NSS; NSS Insignia, Organization of NSS, Funding;							1
•	Regular Activities; Special Camping;							1
•	Adopted village; Maintaining records,							1
•	Collaboration with other Govt. agencies, NGOs							1
Unit 2	**Life Competencies Health & Youth Leadership**							2
•	Definition and importance of life competencies communication and soft skills							2
•	Youth leadership Importance of health, hygiene and sanitation							2
•	Various Govt. programmes							2
•	History and philosophy of yoga; Yoga for healthy living							2

Unit 3	General Awareness	3-4
•	Environment conservation, Enrichment and Sustainability; Climate Change;	3-4
•	Waste Management; Natural Resource Management	3-4
•	Introduction; Classification of disasters; Role of NSS in disaster management with more emphasis on disasters specific to NE India; Civil defense	3-4
•	Definition and meaning; Qualities of a good entrepreneur; Risks; Various policies aiding an entrepreneur, Sources of funding and formalities	3-4
Unit 4	Project /Field work	1-4
•	Introduction and Basic Concepts of NSS. , Emblem, flag, motto, song, badge, etc.,. Organizational structure, roles, and responsibilities of various NSS functionaries.	1-4
•	Concept of regular activities, special camping, Day Camps, Basis of adoption of village/slums, Methodology of conducting Survey. Maintenance of the Diary, Issues, challenges and opportunities for youth	1-4
•	Experiential learning and Internship participation	1-4
•	Shramdan and participation in awareness rallies and activities	1-4
Reference Boo	1. NSS Manual 2. National Youth Policy Document 3. National Service Scheme - A Youth Volunteers Programme For Under Graduate Students As Per UGC Guidelines by J D S Panwar, A K Jain & B K Rathi (Astral) 4. Communication Skills by N Rao& R P Das (HPH) 5. Light on Yoga by B K Iyenger (Thorsons) 5. Biodiversity, Environment and Disaster Management by Shamna Hussain (Unique Publishers 6. Fundamentals of Entrepreneurship by H Nandan (PHI)	

In hours			
L	T	P	Credit
1	0	2	2

Course Code					
Course Title	**Therapeutic Yoga**				
Course Outcomes	On the completion of the course the student will be able to CO1:To understand the Concept of Yoga and therapeutic aspect of yoga CO2: Human Anatomy and physiology CO3: Therapeutic aspect of yogasanas, pranayama, mudras and satkriyas CO4:Practice of Yogasanas, pranayama, bandas, sat karma and meditation CO5: Construct and analyze a personal health profile and develop a plan to improve one's health related behavior				
Examination Mode	Theory + Practical				
Assessment Tools	Written Quiz	ABL/PBL	MSP	ESE	ESP
Weightage	10	5	20	35	30
Syllabus					**CO Mapping**
Unit 1	Introduction to Yoga Therapy and Human body				
•	Meaning and concept of Yoga Therapy				CO1
•	Yogic Concept of Health and Disease: Concept of Adhi and Vyadhi; Meaning and definitions				CO1
•	Concepts of Trigunas, Pancha-mahabhutas, Pancha-prana and their role in Health and Healing				CO1
•	Tapatrayas and Kleshas, Physical and Physiological manifestation of Disease: Vyadhi, Alasya, Angamejayatva and Ssvasa–prashvasa				CO1
•	Meaning and concept of anatomy and physiology health				CO2

•	Basics physiology of some major systems	CO2
Unit 2	Yoga Therapy For Common Ailments	
•	Meaning, cause and symptoms of arthritis. Yogasanas, Pranayama, Satkriyas, Meditation, Mitahar, Yoga Nidra for Artritis Back Pain and Yoga:	CO3
•	Meaning, cause and symptoms of Back Pain Yogasanas, Pranayama, Satkriyas, Meditation, Mitahar, Yoga Nidra and Prayer for Back Pain	
•	Meaning, cause and symptoms of Common cold, Sinusitis, Tonsillitis. Yogasanas, Pranayama, Satkriyas, Meditation, Mitahar, Yoga Nidra ,Mitahar and fasting for Common cold, Sinusitis, Tonsillitis. Constipation and Yoga:	
•	Meaning, cause and symptoms of Constipation Yogasanas, Pranayama, Satkriyas, Meditation, Mitahar, Yoga Nidra and Mitahar for Constipation.	
•	Meaning, cause and symptoms of Eye problems, Migraine, Headache. Yogasanas, Pranayama, Satkriyas, Meditation, Mitahar, Yoga Nidra for Eye problems, Migraine and Headache	
•	Meaning, cause and symptoms of High and low B.P. Yogasanas, Pranayama, Satkriyas, Meditation, Mitahar, Yoga Nidra and Karm Yoga Practice for High and low B.P.	
Unit 3	Yoga Therapy(Practical)	CO4
•	Yoga Therapy for Arthritis	
•	Yoga Therapy for Back Pain	
•	Yoga Therapy for Common cold, Sinusitis, Tonsillitis	
•	Yoga Therapy for Constipation	

•	Yoga Therapy for high B.P., low B.P.	
•	Yoga Therapy for Eye problems, Migraine, Headache	
Unit 4	**Lesson Plan and Presentation**:	
•	Each student shall have to prepare and give at least one lecture cum Demonstration on different topics of Paper and also shall have to prepare and to give Four (4) lessons in the class under the supervision of their Yoga Practical Teacher. These Lessons should be observed/examined by the Yoga Practical Teacher.	CO5
Text Book/s	1. Agarwal, Satya, P. (1998). The social role of the Gita: How and why, Motilal Banarsidass. 2. Goel Devraj & Goel Chhaya (2013) Universe of Swami Vivekananda & Complete Wholistic Cocial Development, CASE Publication under UGC SAP, The M.S University of Baroda, Vadodar 3. Nash T.N. (2006). Health and physical education. Hyderabad: Nilkamal Publishers. 4. Hedge,(1997).How to maintain good health. New Delhi : :UBPSD Publishers. 5. Tiwari,O.P.(2002).Asana: Why and how .India: Kanalyadhama. 6. Dr R Nagarathna and Dr H R Nagendra:Yoga and Health, Swami Vivekananda Yoga Prakashana, 2002 7. Dr R Nagarathna and Dr H R Nagendra:Yoga for Promotion of Positive Health, Swami Vivekananda Yoga Prakashana, 2002 8. Jnananda Bharati :Essence of Yoga Vasinoha, Pub: Sanata Books, Chennai 9. Shankar,G.(1998). Holistic approach of yoga. New Delhi:Aditya Publishers. 10. Shekar,K. C. (2003). Yoga for health. Delhi: Khel Sahitya Kendra	
Reference Book/s	11Hatha Ratnavali, Tirumala Tirupathi Devasthana, Andhra Pradesh. 12.Gheranda Samhita, Shri Sadguru Publication, New Delhi. 13.Brown, F. Y.(2000). How to use yoga. Delhi:Sports Publication. 14.Gharote, M. L. & Ganguly, H. (1988). Teaching methods for yogic practices .Lonawala: Kaixydahmoe. 15.Rajjan, S. M. (1985). Yoga strengthening of relexation for sports man. New Delhi: Allied Publishers.	

In hours			
L	T	P	Credit
1	0	2	2

Course Code					
Course Title	**Health and Yoga**				
Course Outcomes	On the completion of the course the student will be able to CO1: Identify current health issues and explain their influence on physical, mental, and emotional well-being. CO2: Understand the Concept of Sadvritta, Aahar and Mental Health. CO3: Understand the concept of Yoga related to health CO4: Practice of Yogasanas, pranayama, bandas, sat karma and meditation CO5: Construct and analyze a personal health profile and develop a plan to improve one's health related behavior				
Examination Mode	Theory + Practical				
	Continuous Assessment				
Assessment Tools	Quiz	ABL/PBL	MSP	ESE	ESP
Weightage	**10**	**5**	**20**	**35**	**30**
Syllabus					**CO Mapping**
Unit 1	**Health**				
•	Health: Definition, Concept, Dimensions, Spectrum and Determinants of Health.				CO1
•	Role of heredity and Genetics in Achieving Positive Health Nutrition and nutritional disease				CO1
•	Concept of Sadvritta, Aahar and Mental Health.				CO2

Unit 2	**Yoga and Health**	
•	Fundamentals of Yoga: meaning, definition, Historyand concepts (tri-shareer, chakras, panchkoshas) of Yoga.	CO3
•	Yoga Psychology: Chitta, Chitavritti, Chittbhumies and Chittaprasadhanam.	
•	Yoga Schools: Hath yoga,Janana yoga, Asataya yoga, Karma Yoga, Raja Yoga,Bhakti Yoga.	
Unit 3	**Practical** The practice of the following with brief theoretical knowledge about their importance, technique, precautions to be taken and the benefits.	CO4
•	Yogacara's: Suryanamashkar, Pawanmuktasan series- 1,2,3,Simhagarjan, Matsyendrasana, Pada- angushthasana, Dhanurasana, Matsyasana,Uttana-Mandukasana, Garudasana, Ushtrasana, Bhujangasana,Chakrasana, SetubandhSarvangasana, Mayurasana, Sirshasana, Setubandhasana	
•	Pranayamas: Anulom-vilom Pranayama, Ujjai, Sheetali, Seetkari, Bhastrika&Bhramari	
•	Bandhas and Mudras: Practice ofTri-Bandhas, Ashwani, Tadagi, Kaki, Shambhavi	
•	Sat Karmas – JalNeti, Vaman, Trataka, Agnisar	
•	Meditation and Prayer: ChakralMeditation,PanchkoshaDharana.	
Unit 4	**Lesson Plan and Presentation**:	
•	Each student shall have to prepare and give at least one lecture cum Demonstration on different topics of Paper and also shall have to prepare and to give Four (4) lessons in the class under the supervision of their Yoga Practical Teacher. These Lessons should be observed/examined by the Yoga Practical Teacher.	CO5
Text Book/s	1. Agarwal, Satya, P. (1998). The social role of the Gita: How and why, MotilalBanarsidass. 2. GoelDevraj&GoelChhaya (2013) Universe of Swami Vivekananda & Complete WholisticCocial Development, CASE Publication under UGC SAP, The M.S University of Baroda, Vadodar 3. Nash T.N. (2006). Health and physical education. Hyderabad:	

	Nilkamal Publishers. 4. Hedge,(1997).How tomaintain good health. New Delhi:UBPSD Publishers. 5. Tiwari,O.P.(2002).Asana: Why and how. India: Kanalyadhama. 6. Dr R Nagarathna and Dr H R Nagendra: Yoga and Health, Swami Vivekananda Yoga Prakashana, 2002 7. Dr R Nagarathna and Dr H R Nagendra:Yoga for Promotion of Positive Health, Swami Vivekananda Yoga Prakashana, 2002 8. JnanandaBharati: Essence of Yoga Vasinoha, Pub: Sanata Books, Chennai 9. Shankar,G.(1998). Holistic approach of yoga. New Delhi:Aditya Publishers. 10. Shekar,K. C. (2003). Yoga for health. Delhi: KhelSahitya Kendra	

In hours			
L	T	P	Credit
3	0	0	3

Course Code	PHS150							
Course Title	**Basics of Physics**							
Course Outcomes	On the completion of the course the student will be able to CO1: understand basics of thermodynamics and Kinetic theory of gases. CO2: understand about the dual nature of matter and radiation CO3: understand about laser and its applications CO4: understand about properties of atomic nucleus and basics of radioactivity.							
Examination Mode	Theory							
Assessment Tools	**Continuous Assessment**				**MSE**	**MSP**	**ESE**	**ESP**
	W Quiz	**SAP**	**ABL/ PBL**	**Lab Performance**				
Weightage	**10**	**10**	**5**	**-**	**25**	**-**	**50**	
Syllabus								**CO Mapping**
Unit 1	Thermodynamics and Kinetic Theory of Gases							
	Thermal equilibrium, zeroth law of thermodynamics, concept of temperature. Heat, work and internal energy. First law of thermodynamics. Second law of thermodynamics: reversible and irreversible processes. Carnot engine and its efficiency. Equation of state of a perfect gas, work done on compressing a gas. Kinetic theory of gases-assumptions, concept of pressure. Kinetic energy and temperature: rms speed of gas molecules; Degrees of freedom, Law of equipartition of energy.							CO1
Unit 2	**Dual nature of matter and Radiation**							
	Dual nature of radiation. Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric equation; particle nature of light. Matter waves-wave nature of particle, de Broglie relation. Davisson Germer experiment.							CO2

Unit 3	**Introduction to laser and its applications**	
	Absorption and emission of radiations, Principle of lasers, Einstein's coefficients, Population inversion, Basic components of lasers, Metastable states, Three level and four level lasers, Some different lasers, Characteristics of laser light, Applications of lasers.	CO3
Unit 4	**Atoms and Nuclei**	
	Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model, energy levels, hydrogen spectrum. Composition and size of nucleus, atomic masses, isotopes, isobars; isotones. Radioactivity-alpha, beta and gamma particles/rays and their properties; radioactive decay law. Mass-energy relation, mass defect; binding energy per nucleon and its variation with mass number, nuclear fission and fusion.	CO4
Text Books	1. G. Aruldhas, Engineering Physics, PHI learning Private limited, 2010. 2. V.S. Bhatia, Statistical Physics and Thermodynamics. New Delhi: Vishal Publication, 1986. 3. Fundamentals of Physics (Volume-1 and Volume-2) by Halliday & Resnick, Wiley Publishers. 4. Concepts of Physics (Volume-1 and Volume-2) by H C Verma	
Reference Books	1. K. Hyde, Basic ideas and Concepts in Nuclear Physics: (Institute of Physics), 2004. 2. A. Beiser, Concepts of Modem Physics: McGraw Hill, 1987 3. R.H. Swendsen, An Introduction to Statistical Mechanics & Thermodynamics. Oxford: Oxford University Press, 2012. 4. N.K. Verma, Physics for Engineers. New Delhi: Prentice Hall., 2014.	

In hours			
L	T	P	Credit
3	0	0	3

Course Code								
Course Title	**Basics of Chemistry**							
Course Outcomes	On the completion of the course the student will be able to CO1: To understand the basic concepts related to Atomic and Molecular Structure. CO2: To understand the basics of analysis in chemistry and introduction to physical concepts in Chemistry. CO3: Introduction of Organic chemistry concepts and various types of reactions in chemistry. CO4: To understand various theories of molecular structure							
Examination Mode	Theory							
	Continuous Assessment				**MSE**	**MSP**	**ESE**	**ESP**
Assessment Tools	**W Quiz**	**SAP**	**ABL/ PBL**	**Lab Performance**				
Weightage	**10**	**10**	**5**	**-**	**25**		**50**	
Syllabus								**CO Mapping**
Unit 1	Atomic and Molecular Structure							CO1
•	Bohr theory, hydrogen spectrum, particle-wave duality, wave function, quantum numbers, Pauli exclusion principle, Aufbau principle, Hund's rule							
•	Trends in atomic size, ionization energies, electron affinity, electronegativity. Lewis Theory							
Unit 2	Introductory Physical Chemistry							CO2
•	Masses of atoms, molecules and reacting substances, States of matter							
•	Redox Reactions, Energy, Enthalpy and Entropy							

•	Chemical Equilibrium and Acid-Base Equilibria, The Rates of Chemical Reactions	
Unit 3	General Organic Chemistry	CO3
•	Classification and IUPAC nomenclature of organic compounds	
•	Alkanes, Alkenes and Alkynes	
•	Reactivity of Selected Homologous Series, Substitution and elimination reactions, Isomerism	
Unit 4	Theories of molecular structure	CO4
•	The shapes of molecules and the VSEPR model, valence bond theory applied to homodinuclear, heterodinuclear and polyatomic molecules, hybridization.	
Text Book/s	1. Introduction to atomic and molecular structure by Russell S Drago 2. Organic Chemistry by Jonathan Clayden, Nick Greeves, Stuart Warren.	
Reference Book/s	1. Atkins' Physical Chemistry 11e: Volume 1: Thermodynamics and Kinetics 2. General Organic Chemistry by Dr. O. P. Agarwal 3. Advanced Inorganic Chemistry 6th Edition by Carlos A. Murillo, Manfred Bochmann, F. Albert Cotton, Geoffrey Wilkinson	

In hours			
L	T	P	Credit
3	0	0	3

Course Code	ZOL 194							
Course Title	**Basics of Biology**							
Course Outcomes	On the completion of the course the student will be able to CO1: Identify the different types of cells and will be able to differentiate between animal and plant cells. CO2: Relate to plants, understand their importance and learn about the developmental processes in plants. CO3: Apply their knowledge of animal tissue structure and classification for understanding the animal kingdom. CO4: Analyze and appreciate the economic importance of plants and animals.							
Examination Mode	Theory							
	Continuous Assessment				**MSE**	**MSP**	**ESE**	**ESP**
Assessment Tools	**W Quiz**	**SAP**	**ABL/ PBL**	**Lab Performance**				
Weightage	**10**	**10**	**5**	**-**	**25**	**-**	**50**	
Syllabus							**CO Mapping**	
Unit 1	Cell Structure and Function						CO1	
•	Cell structure, prokaryotic and eukaryotic Cells, Difference between plant and animal cells, cell division							
•	Structure and functions of biomolecules- proteins, carbohydrates, lipids, vitamins, enzymes, nucleic acids							
Unit 2	Understanding Plants						CO2	
•	Introduction to plant kingdom and its major divisions							
•	Brief morphology and plant tissues							
•	Introduction to photosynthesis and respiration							
•	Process of plant growth and development							

Unit 3	Understanding Animals	CO3
•	Classification of animal kingdom, habits, habitat and characteristic features of important groups	
•	Simple and compound tissues	
•	Functional organization of a mammal	
•	Development of frog upto three germinal layers	
Unit 4	Importance of Plants and Animals for Man	CO4
•	Economically important plants and animals	
•	Medicinal Plants	
•	Applications of plant tissue culture and animal cell culture	
Text Books	1. Kotpal, R.L., Modern Text Book of Zoology, Invertebrates, 10th ed., Rastogi Publications, Meerut, 2012. 2. Bhatia K.N., and Widge, R., Introduction of Botany, Trueman Publishers, Jalandhar, 2010.	
Reference Books	1. Dhami, P.S. and Dhami, J.K., Invertebrate Zoology, 5th ed., R. Chand & Co., New Delhi, 2004. 2. Dhami, P.S. and Dhami, J.K., Chordate Zoology, 5th ed., R. Chand & Co., New Delhi, 2006. 3. Kotpal, R.L., Text Book of Zoology- Vertebrates, Rastogi Publishers, Meerut, 2012. 4. Vidyarthi S., Textbook of Botany., S. Chand and Company, New Delhi, 2002.	

In hours			
L	T	P	Credit
3	0	0	3

Course Code							
Course Title	**Introductory Biotechnology**						
Course Outcomes	On the completion of the course the student will be able to CO1: The students will learn the history and scope of Biotechnology CO2: The students will be able to learn about various diagnostic technique. CO3: The students will learn about role of biotechnology in healthcare. CO4: The students will understand the biosafety measure need to be taken while working on various biotechnological aspects.						
Examination Mode	Theory						
	Continuous Assessment				**MSE**	**MSP**	**ESE**
Assessment Tools	**W Quiz**	**SAP**	**ABL/PBL**	**Lab Performance**			
Weightage	**10**	**10**	**5**	**-**	**25**		**50**
Syllabus							
Unit 1	Introduction to Biotechnology						
	History of Biotechnology, Old and New Biotechnology, Interdisciplinary nature of biotechnology, scope and importance of biotechnology, commercial potential of biotechnology, biotechnology in India.						
Unit 2	Diagnostics						
	DNA and protein-based diagnostics, Agarose gel electrophoresis, SDS, Radioisotope tracer techniques and autoradiography.						

Unit 3	Biotechnology and Healthcare
	Role of biotechnology in prevention and treatment of diseases, detection of genetic diseases, drug designing, drug delivery and targeting, gene therapy, fertility control, DNA fingerprinting and forensic medicine.
Unit 4	Biosafety
	Objectives of biosafety guidelines, risk assessment, physical and biological containment, planned introduction n of genetically modified organisms, biosafety during industrial production, biosafety guidelines in India and regulations.
Text Books	1. Singh, B. D. Biotechnology Expanding Horizons. 2nd Edition. Kalyani Publishers. 2008. Print. 2. Liljefors, T., Krogsgaard-Larsen, P. and Madsen, U. Textbook of Drug Design and Discovery.3rd Edition. CRC Press. 2002. Print. ISBN: 9780415282888
Reference Books	1. Smith, J.E. Biotechnology. 5th Edition. Cambridge Press. 2009. Print. 2. Brown,T.A. Gene cloning and DNA analysis: An introduction.5thEdition. Wiley-Blackwell. 2010.ISBN: 978-1-4051-8173-0 3. Venn, R. F. Principles and Practice of Bioanalysis. 1st Edition. Taylor & Francis. 2000. Print. 4. Hoppert, M. Microscopic Techniques in Biotechnology. 1st Edition. John Wiley & Sons. 2001. Print. 5. Stanbury, P.F., Whitaker, A. and Hall, S.J. Principles of Fermentation Technology. 2nd Edition. Elsevier India. 2009. Print.

In hours			
L	T	P	Credit
3	0	0	3

Course Code							
Course Title	**Introductory Microbiology**						
Course Outcomes	On the completion of the course the student will be able to CO1: Learn the history of microbiology, immunology, soil microbiology and important proponents. CO2: To classify microorganisms and understand characteristics of bacteria, fungi, algae, protozoa and virus CO3: Learn about culture media, several methods of isolation and preservation of pure cultures and physical and chemical methods of microbial control. CO4: Understand the scope of microbiology in various fields						
Examination Mode	Theory						
	Continuous Assessment				**MSE**	**MSP**	**ESE**	**ESP**
Assessment Tools	**W Quiz**	**SAP**	**ABL/PBL**	**Lab Performance**				
Weightage	**10**	**10**	**5**	**-**	**25**		**50**	
Syllabus								**CO Mapping**
Unit 1	History of Microbiology							CO1
•	Development of microbiology as a discipline. Spontaneous generation vs. biogenesis. Contributions of Anton von Leeuwenhoek, Louis Pasteur, Robert Koch, Joseph Lister, Alexander Fleming.							
•	Role of microorganisms in Fermentation, Germ theory of disease, Golden era of microbiology, Contributions of Martinus W. Beijerinck, Sergei N. Winogradsky, Selman A.Waksman in the field of soil microbiology.							
•	Establishment of fields of medical microbiology and immunology through the work of Paul Ehrlich, Elie Metchnikoff, Edward Jenner.							
Unit 2	Microbial Biodiversity							CO2

•	Systems of classification-Binomial Nomenclature, Whittaker's five kingdom and Carl Woese's three domain classification systems and their utility.	
•	General characteristics of different groups: A cellular microorganisms (Viruses, Viroids, Prions) and Cellular microorganisms (Bacteria, Algae, Fungi and Protozoa) with emphasis on general characteristics, history, distribution and occurrence, morphology, mode of reproduction and economic importance.	
Unit 3	Growth and control of microorganisms	CO3
•	Culture media: components of media, natural and synthetic media, chemically defined media, complex media, selective, differential, indicator, enriched and enrichment media.	
•	Define Mixed culture, pure culture, Pure culture isolation: Streaking, serial dilution and plating methods; cultivation, maintenance and preservation/stocking of pure cultures.	
•	Physical methods of microbial control: heat, low temperature, high pressure, filtration, desiccation, osmotic pressure, radiation. Chemical methods of microbial control.	
Unit 4	Scope of Microbiology	CO4
•	Scope of Microbiology, Microbiology in the field of medicine,	
•	Microbiology in the field of environment, Microbiology in the field of agriculture.	
•	Microbiology in the field of food, Microbiology in fermentation industry.	
Text Books	1. **Microbiology by Pelczar Chan and Krieg** 2. **Brock's book of Microbiology**	
Reference Books	1. Pelczar MJ, Chan ECS and Krieg NR. Microbiology: Application based approach 7th edition. McGraw Hill Book Company. 2009 2. Wiley JM, Sherwood LM and Woolverton CJ. Prescott's Microbiology. 10th Edition. McGraw Hill International. 2016. Print. 3. Tortora GJ, Funke BR,Case CL, Weber D, Bair. W. Microbiology: An Introduction. 13th edition. Pearson Education. 2018. Print	

	4. Madigan MT, Bender KS, Buckley DH, Sattley WM, Stahl DA. Brock Biology of Microorganisms. 14th edition. Pearson International Edition. 2017. Print 5. Stanier RY, Ingraham JL, Wheelis ML, and Painter PR. General Microbiology. 5th edition. McMillan. 2005. Print	

In hours			
L	T	P	Credit
3	0	0	3

Course Code								
Course Title	**Functioning of the Human Body**							
Course Outcomes	On the completion of the course the student will be able to CO1: understand the role of different nutrients. CO2: understand the functioning of different life sustaining systems CO3: understand the functioning of controlling and coordinating systems CO4: understand the functions of different hormones and the associated diseases.							
Examination Mode	Theory							
	Continuous Assessment				**MSE**	**MSP**	**ESE**	**ESP**
Assessment Tools	**W Quiz**	**SAP**	**ABL/ PBL**	**Lab Performance**				
Weightage	**10**	**10**	**5**	**-**	**25**		**50**	
Syllabus								**CO Mapping**
Unit 1	Nutrition and Digestion							
•	Types of nutrition and nutrients; sources and functions of nutrients and the diseases associated with their excess or lesser intake.							CO1
•	Alimentary canal; Structure and function of digestive glands;							CO2
•	Digestion and absorption of carbohydrates, fats and proteins							CO2
•	Nervous and Hormonal control of Digestion							CO3
Unit 2	Life Sustaining Systems							
•	Respiratory system, Ventilation; External and Internal Respiration; Transport of oxygen and carbon dioxide in blood; Factors affecting transport of gases.							CO2
•	Composition of blood, Lymph; Blood groups; Blood coagulation; Structure of heart; co-ordination of heart beat, Cardiac cycle; ECG							CO2

•	Functional anatomy of kidney; Mechanism and regulation of urine formation.	CO2
Unit 3	Endocrine and Reproductive systems	
•	Structure of pituitary, thyroid, parathyroid, pancreas, adrenal, ovaries, testes; and the diseases associated with them	CO4
•	Spermatogenesis; Oogenesis; Physiology of male and female reproductive systems; hormonal and neuronal control	CO3
Unit 4	Nervous and Muscular Systems	
•	Structure of Neuron; Propagation of nerve impulses (myelinated and non-myelinated nerve fibres); neuromuscular junctions	CO3
•	Structure of skeletal muscle, Mechanism of muscle contraction (sliding filament theory)	CO3
Text Book/s	1.Singh, H.R., Kumar, N., Airi M. Biochemistry and Physiology. Vishal Publishing Co. 2022 2.Patil, H.S.R, Makari, H.K., Gurumurthy, H., Soowmya, S.V. A Textbook of Human Physiology. Wiley, 2020	
Reference Book/s	1. Tortora, G.J., Derrickson, B.H. Principles of Anatomy and Physiology, XII Edition, John Wiley and Sons, Inc., 2009. 2. Guyton, A.C., Hall, J.E. Text Book of Medical Physiology, XIIth edition, Harcourt Asia Pvt. Ltd./W.B. Saunders Company, 2011	

In hours			
L	T	P	Credit
3	0	0	3

Course Code								
Course Title	**Introductory Botany**							
Course Outcomes	On the completion of the course the student will be able to CO1: The students will be able to learn about structure and function of plant cell. Also, students will learn about different types of plant cell. CO2: The students will be able to learn about basic body plan of a plant including structure, functions and modifications of root, stem and leaf. CO3: The students will be able to understand about reproductive parts of plant, an introduction to pollination and reproductive methods. CO4: The students will be able to learn about different types of classification involved in botany.							
Examination Mode	Theory							
	Continuous Assessment				**MSE**	**MSP**	**ESE**	**ESP**
Assessment Tools	**W Quiz**	**SAP**	**ABL/PBL**	**Lab Performance**				
Weightage	**10**	**10**	**5**	**-**	**25**		**50**	
Syllabus							**CO Mapping**	
Unit 1	Introduction to Plant Cell						CO1	
•	Plant cell – structures and features							
•	Plant cell wall – what makes it unique?							
•	Differences of plant cell from animal cell							
•	Different types of plant cells							
Unit 2	Plant Body						CO2	
•	Stem structure, function and modifications							

•	Leaf structure, function and modifications	
•	Root structure, function and modifications	
Unit 3	Plant Reproduction	CO3
•	Flower – structural specialization and functions	
•	Pollination and pollinating agencies	
•	Vegetative reproductive organs	
Unit 4	Introduction to plant classification	CO4
•	Need of classification	
•	Brief introduction to systems of classification	
•	Basis of classification	
•	Taxonomic hierarchy	
Text Books	1. Pande, B.P. Plant Anatomy. NewYork: Associated Press, 2002. Print. 2. Evert, R.F. Esau's Plant Anatomy: Meristems, Cells, and Tissues of the Plant Body: Their Structure, Function and Development. USA: John Wiley and Sons, Inc. 2006. Print 3. Singh, G. Plant Systematics: Theory and Practice. 3rd ed. New Delhi: Oxford & IBH Pvt. Ltd., 2012. Print. 4. Jeffrey, C. An Introduction to Plant Taxonomy. Cambridge: Cambridge University Press, 1982. Print. 5. Judd, W.S., Campbell, C.S., Kellogg, E.A. and Stevens, P.F. Plant Systematics-A Phylogenetic Approach. 2nd ed. USA: Sinauer Associates Inc., 2000. Print. 6. Singh, SP., Textbook of Biochemistry, 6th Edition, CBS Publishers, India, 2015. Print.	
Reference Books	1. Dickison, W.C. Integrative Plant Anatomy. USA: Harcourt Academic Press, 2009. Print.Stryer, L. Biochemistry. 5th ed. New York: W.H. Freeman and Co., 1995. Print. 2. Fahn, A. Plant Anatomy. USA: Pergmon Press, 1974. Print. 3. Mauseth, J.D. Plant Anatomy. USA: The Benjammin/Cummings Publisher, 1988. Print. 4. Maheshwari, J.K. Flora of Delhi. New Delhi: CSIR, 1963. Print. 5. Radford, A.E. Fundamentals of Plant Systematics. New York: Harper and Row, 1986. Print	

	6. Voet, Donald and Voet, Judith G., Biochemistry, 3rd Edition, John Wiley & Sons Inc., Singapore, 2004. Print.	

In hours			
L	T	P	Credit
3	0	0	3

Course Code	MGN 101M							
Course Title	**Business Management for Beginners**							
Course Outcomes	On the completion of the course the student will be able to CO1: Understand basic terminology and concepts used in business management CO2: Interpret the roles of various managerial functions in managing organizations. CO3: Analyze the form of organization structure and selection of staff necessary for effective and efficient management of operations and processes. CO4: Know the importance of directing, communication and control for the effective running of an organization							
Examination Mode	Theory							
	Continuous Assessment				**MSE**	**MSP**	**ESE**	**ESP**
Assessment Tools	**W Quiz**	**SAP**	**ABL/PBL**	**Lab Performance**				
Weightage	**10**	**10**	**5**	**-**	**25**		**50**	
Syllabus								**CO Mapping**
Unit 1	Introduction to Business Management							CO1
•	Introduction to business management- Definition of management, characteristics of management, management as an art, science and profession, universality of management, levels of management, Administrative vs. Management, managerial roles and skills.							
•	Management process, Contribution to Management Thought with special reference to Taylor, Fayol, Elton Mayo, Maslow, Dougals-McGregor							
Unit 2	Planning and Decision Making							CO2
•	Planning- Introduction, planning and plan, strategy and strategic planning, main components of plan, vision, mission, purpose, objectives,							

	goals and targets, Management by Objectives (MBO). Forecasting and Decision Making	
Unit 3	Organizing and Staffing	CO3
•	Principles, Features, Various Forms of organization structure, Authority and Responsibility Relationships	
•	Staffing- Introduction, factors affecting and qualities of good staffing, manpower planning, recruitment and selection.	
Unit 4	Directing, Communication and controlling	CO4
•	Directing and Co-ordination, Leadership- Characteristics, importance, style, role, quality and skills of leader.	
•	Communication, its Meaning, Process, Types, Barriers and Solutions, Motivation, its Meaning, Importance,	
•	Meaning, characteristics, scope, control process, types of control, designing effective control systems.	
Text Books	1. Rudani Ramesh, Principles of Management, Delhi: Tata, McGraw-Hill Education, 1st Edition 2013	
Reference Books	1. Harold Koontz and Heinz Weihnih, Essentials of Management: An International Perspective, New Delhi, McGraw Hill. 2. Stephen P. Robbins, David A Decanzo, Fundamental of Management, New Delhi, Pearson Education. 3. Prasad L M, Principles and Practices of Management, New Delhi: Sultan Chand & Sons, New Delhi	

In hours			
L	T	P	Credit
3	0	0	3

Course Code	MGN 102M							
Course Title	**Fundamentals of Mutual Funds**							
Course Outcomes	On the completion of the course the student will be able to CO1: An in-depth understanding of concept, role and legalities of mutual funds. CO2: Thorough knowledge of fund structure and distribution of mutual funds. CO3: Application of tools for Valuation and Performance analysis of mutual funds. CO4: Ability to provide necessary support and assistance to investors of mutual funds.							
Examination Mode	Theory							
	Continuous Assessment				**MSE**	**MSP**	**ESE**	**ESP**
Assessment Tools	**W Quiz**	**SAP**	**ABL/PBL**	**Lab Performance**				
Weightage	**10**	**10**	**5**	**-**	**25**		**50**	
Syllabus								**CO Mapping**
Unit 1	Basics of Mutual Fund							CO1
•	Concept of a Mutual fund							
•	Role of a Mutual fund							
•	Legal structure of Mutual funds in India, Offer Document							
Unit 2	Fund structure and Distribution							CO2
•	Fund Structure & Constituents							
•	Fund Distribution							
•	Channel Management Practices							
Unit 3	Valuation and Performance analysis of Mutual fund							CO3

•	Accounting, Valuation & Taxation	
•	Return, Risk & Performance of Funds	
•	Mutual Fund Scheme Selection	
Unit 4	Investor's Support and assistance	CO4
•	Investor Service, Selecting the Right Investment Products for Investors	
•	Helping Investors with Financial Planning	
•	Recommending Model Portfolios & Financial Plans	
Text Books	1. NISM VA certification module **2. Study Guide to NISM V-A Exam: Mutual Fund Distributors Certification by G Ramesh Prabhu.**	
Reference Books	**1. A Book on Mutual Fund NISM VA Exam Kindle Edition by Anil Kumar** **2. Common sense on Mutual funds, John, C. Bogle and David F. Swesen, Wiley publications, 10th edition** 3. Fundamentals of Investing, Scott B. Smart, Pearson, 13th edition	

In hours			
L	T	P	Credit
3	0	0	3

Course Code	ECN 101M							
Course Title	**Economics for Beginners**							
Course Outcomes	On the completion of the course the student will be able to CO1: Describe the concepts and objectives of study of Economics. CO2: Explain the behavioral pattern of various economic entities and their inter-relationships within the framework of economic theory. CO3: Understand concepts such as demand, supply, market, market structures. CO4: Explain the operation of a market system.							
Examination Mode	Theory							
	Continuous Assessment				**MSE**	**MSP**	**ESE**	**ESP**
Assessment Tools	**W Quiz**	**SAP**	**ABL/PBL**	**Lab Performance**				
Weightage	**10**	**10**	**5**	**-**	**25**		**50**	
Syllabus								**CO Mapping**
Unit 1	Nature and Scope of Economics							
•	Meaning of Economics							CO1
•	Nature and Scope of Economics							CO1
•	Importance of Economics							CO1
•	Economics: An introduction to the term Macro and Micro economics							CO1
Unit 2	Demand							
•	Demand concept, Types, Function, Law of Demand							CO2
•	Elasticity of Demand: Concept, Type							CO2

•	Supply and its Determinants, Law of Supply	CO2
•	Market Equilibrium	CO2
Unit 3	Markets	
•	Market Types & Features	CO3
•	Pure and Perfect Competition	CO3
•	Cost and Revenue Analysis	CO3
Unit 4	Price Determination	
•	Price Determination in a Perfectly Competitive Market	CO4
•	Supply curve of firm –Short Run & Long Run Equilibrium of a Perfectly Competitive Firm & Industry	CO4
Text Books	1. Principles of Microeconomics, N. Gregory Mankiw; South western Cengage Learning.	
Reference Books	1. Economics; Paul A Samuelson, William D Nordhaus; Tata Mc Graw Hill, Special Indian Edition (Indian Adaptation by Sudip Chaudhari and Anindya Sen). 2. Pindyck, Rubinfeld and Mehta: Microeconomics (Pearson Education Asia) 3. Lipsey and Chrystal: Principles of Economics (Oxford University Press)	

In hours			
L	T	P	Credit
2	0	2	3

Course Code								
Course Title	**Professional Communication**							
Course Outcomes	On the completion of the course the student will be able to: CO1: acquire knowledge, skills, and judgment around human communication that will facilitate their ability to work collaboratively with others. CO2: develop communication competencies such as managing conflict, understanding small group processes, active listening, appropriate self-disclosure, etc. CO3: perform efficiently in interviews, presentations, group discussions etc. through thorough practice provided during the course. CO4: develop awareness of appropriate communication strategies, engage in scholarly inquiry and social scientific research, recognize the effects of diversity, access, and power on communication, analyse a variety of communication acts and networks and develop and deliver professional presentations.							
Examination Mode	Theory + Practical							
	Continuous Assessment				**MSE**	**MSP**	**ESE**	**ESP**
Assessment Tools	**W Quiz**	**SAP**	**ABL/PBL**	**Lab Performance**				
Weightage	**10**		**5**		**25**		**35**	**25**
Syllabus							**CO Mapping**	
Unit 1	Language in Communication							
•	Use of language in communication: Significance of technical communication Vocabulary Development: technical vocabulary, vocabulary used in formal letters/emails and reports, sequence words, misspelled words, compound words, finding suitable synonyms, paraphrasing, verbal analogies.						CO4	

•	Language Development: subject-verb agreement, personal passive voice, numerical adjectives, embedded sentences, clauses, conditionals, reported speech, active/passive voice.	CO1
•	Technology-based communication: Effective email messages, slide presentations, editing skills using software.	CO1
•	Practical: Formal writing: Technical Writing: differences between technical and literary style. Letter Writing (formal, informal and semi formal), Job applications, Minute preparation, CV preparation (differences between Bio-Data, CV and Resume), and Reports.	CO3
Unit 2	Reading and Comprehension	
•	Reading, Comprehension, and Summarizing: Reading styles, speed, valuation, critical reading, reading and comprehending shorter and longer technical articles from journals, newspapers, identifying the various transitions in a text, SQ3R method, PQRST method, speed reading.	CO4
•	Comprehension: techniques, understanding textbooks, marking and underlining, Note-taking	CO4
•	Poem: "An Introduction" Kamala Dass	CO2
•	Practical: Reading: Speed Reading, reading with the help of Audio-Visual Aids, Reading Comprehension Skills	CO3
Unit 3	Presentation Skills	
•	Oral Presentation: Voice modulation, tone, describing a process, Presentation Skills: Oral presentation and public speaking skills, business presentations, Preparation: organizing the material, self-Introduction, introducing the topic, answering questions, individual presentation practice, presenting visuals effectively.	CO1
•	Debate and Group Discussions: introduction to Group Discussion (GD), differences between GD and debate; participating GD, understanding GD, brainstorming the topic, questioning and clarifying, GD strategies, activities to improve GD skills	CO4
•	Chapter: "Introduction: The Hidden Side of Everything" from Freakonomics by Steven D. Levitt and Stephen J. Dubner	CO3
•	Practical: Mock interview and Debate/Group Discussion: concepts, types, Do's and Don'ts- intensive practice	CO4
Unit 4	Listening Skills	
•	Listening and Interview Skills Listening: Active and Passive listening, listening: for general content, to fill up information, intensive	CO2

	listening, for specific information, to answer, and to understand. Developing effective listening skills, barriers to effective listening, listening to longer technical talks, listening to classroom lectures, talks on engineering /technology, listening to documentaries and making notes, TED talks.	
•	Interview Skills: types of interviews, successful interviews, interview etiquette, dress code, body language, telephone/online (Skype) interviews, one-to-one interview & panel interview, FAQs related to job interviews	CO4
•	Short story: “Story of a poem” by Chandrika B.	CO4
•	Practical: Listening: Exercises based on audio materials like radio and podcasts. Listening to Song. practice and exercises.	CO1
Text Book/s	B., Chandrika, "The Story of a Poem". Katha: Short Stories by Indian Women edited by Urvashi Butalia. Telegram, 2007. Dass, Kamala. "An Introduction" Selected Poems, Penguin, 2014. Koneru, Aruna. Professional Communication. Delhi: McGraw, 2008. Kumar, Sanjay and Pushp Lata. Communication Skills. New Delhi: Oxford University Press, 2015. Levitt, Steven D. and Stephen J. Dubner, "Introduction: The Hidden Side of Everything", Freakonomics, Harper Collins, 2006. Lucas, Stephen E. The Art of Public Speaking. McGraw Hill Education, 2012. Rizvi, M. Ashraf. Effective Technical Communication. Tata Mc Graw –Hill, 2015.	
Reference Book/s	Ganguly, Anand. *Success in Interview.* RPH, 5th Edition, 2016. Mahanand, Anand. *English for Academic and Professional Skills*. Delhi: McGraw,2013. Murphy, Raymond. *English Grammar in Use*. Delhi: Cambridge University Press, 2015. Sharma, Raman. *Technical Communications*. Oxford Publication, London, 2004.	

In hours			
L	T	P	Credit
1	0	4	3

Course Code	EDU 199							
Course Title	**Fine Arts**							
Course Outcomes	On the completion of the course the student will be able to CO1: Understand the basics and history of art. CO2: Learn concepts of sketching and develop concentration. CO3: Develop aesthetics CO4: Acquire knowledge about digital art.							
Examination Mode	Theory + Practical							
	Continuous Assessment				**MSE**	**MSP**	**ESE**	**ESP**
Assessment Tools	**W Quiz**	**SAP**	**ABL/ PBL**	**Lab Performance**				
Weightage	10		5			25	25	35
Syllabus								**CO Mapping**
Unit 1	History of Art							CO1
•	Introduction to Art, Fundamentals and History of Indian Art.							
Unit 2	Sketching							CO2
•	Lines, Shapes and Forms							
Unit 3	Painting,							CO3
•	Portrait, Landscape and Still Life							
Unit 4	Digital Designing							CO4
•	Photoshop, Coral Draw							
Reference Books	1. The History of Indian Art by Sandhya Ketkar, Anil Rao							

	2. History of Medieval Indian Art and Architecture	

In hours			
L	T	P	Credit
2	0	2	3

Course Code								
Course Title	**Jyotish: Eye of the Veda**							
Course Outcomes	On the completion of the course the student will be able to CO1: Understand concept of Vedas and Vedang (Jyotish) CO2: Learn the various aspects related to Astrology. CO3: Conceptualize the details about Zodiac Signs. CO4: Understand about Houses & Planets.							
Examination Mode	Theory + Practical							
	Continuous Assessment				**MSE**	**MSP**	**ESE**	**ESP**
Assessment Tools	**W Quiz**	**SAP**	**ABL/ PBL**	**Lab Performance**				
Weightage	**10**		**5**		**25**		**35**	**25**

Syllabus		**CO Mapping**
Unit 1	Vedic Study & Astrology	CO1
•	Meaning of Vedas, Vedic Traditions and Time Division.	
•	General introduction of Rigveda-Yajurveda, Samaveda, Atharvaveda. Practice of Recitation of Vedmantras Jatta Patth, Pada Patth, General introduction of Vedangas–Shiksha, Kalpa, Grammar, Nirukta, Chhanda, Jyotish.	
•	Definition of Astrology, Purpose of Astrology, Relevance of Astrology, Scientificity of Astrology, Excellence of Astrology in Vedas.	
•	Astrology and Psychology, Astrology and Karma Astrology and Luck, Utility of Astrology.	
Unit 2	Details of Astrology	CO2

•	The nature of astrology, the distinctions of astrology	
•	The subject matter of astrological distinctions, the promoters of astrology.	
•	The glory of astrology, general introduction to the five wings of astrology.	
Unit 3	Zodiac Sign	CO3
•	Zodiac signs, names and introduction of the owner of the zodiac signs, nature of the zodiac signs, qualities/religion of the zodiac signs.	
•	Zodiac configuration in the body of Kaalpurush, different nouns of zodiac signs, direction of male zodiac signs, characters of zodiac signs, names and introduction of nine planets, exaltation of planets, low and basic triangle zodiac signs.	
•	Attributes/ religion of planets, royalty, ownership of directions, masculine noun and planetary vision and natural friendship.	
Unit 4	Introduction of Planets & Houses	CO4
•	General introduction of twelfth houses, Bhava and Bhavesh knowledge, causative factors of bhava,	
•	Variable and fixed karaka planet, different nouns of bhava, Upachaya, and Anupanay, Kendra	
Text Books	1. Hans, C. N. (2016). 2. Brihad-Anuvad-Chandrika. Motilal Banarasidass Publishing House. 3. Falit Jyotish by Mahendra Nath Kedar. 4. Mansagri	
Reference Books	1. Indian Astorlogy Nemi Chandra Shastri 2. Laghujatakam 3. Vidyapeeth Panchang and Indian horoscope Science	

	4. Janmapatra Deepak 5. Sanskrit Vyakarn, Chandrika Anuvad 6. Rachananuwad Kaumudi 7. Falit Astrology 8. Mansagari	

In hours			
L	T	P	Credit
3	0	0	3

Course Code								
Course Title	**Mathematical Statistics**							
Course Outcomes	On the completion of the course the student will be able to CO1: Understand types of data and their attributes, representation of data. CO2: demonstrate competence in using Measures of Central tendency and Measures of Dispersion. CO3: Understand Probability, Random variables. CO4: Understand applications of Correlation, Regression and Probability Distribution.							
Examination Mode	Theory							
	Continuous Assessment				**MSE**	**MSP**	**ESE**	**ESP**
Assessment Tools	**W Quiz**	**SAP**	**ABL/PBL**	**Lab Performance**				
Weightage	**10**	**10**	**5**	**-**	**25**		**50**	
Syllabus							**CO Mapping**	
Unit 1	Data and its Types						CO1	
•	Types and collection of data							
•	Classification and Tabulation of data							
•	Graphical representation of data							
Unit 2	Descriptive Statistics						CO2	
•	Measures of Central tendency (Arithmetic Mean, Median, Mode, Geometric mean, Harmonic mean) with simple applications							

•	Measures of Dispersion (Range, Quartile deviation, Mean deviation, Standard deviation, variance) with applications	
Unit 3	Probability and Random Variables	CO3
•	Basic concepts of probability, random experiments	
•	Definition of Random variable, discrete and continuous random variables	
•	Probability mass function and probability density function	
•	Mathematical expectations	
Unit 4	Probability Distributions	CO4
•	Correlation and regression	
•	Binomial, Poisson, Negative Binomial, Normal distribution	
•	Beta and Gamma distributions and their applications.	
Text Books	1. Anderson TW. 1958. An Introduction to Multivariate Statistical Analysis. John Wiley. 2. S.C. Gupta, Fundamentals of Statistics 2018, Himalaya Publishing House	
Reference Books	1. Goon AM, Gupta MK & Dasgupta B. 1983. Fundamentals of Statistics. Vol. I. 2. Hoel PG. 1971. Introduction to Mathematical Statistics. John Wiley. **3. Goon AM, Gupta MK & Dasgupta B. 1977. An Outline of Statistical Theory. Vol. I**	

In hours			
L	T	P	Credit
3	0	0	3

Course Code								
Course Title	**Introductory Journalism**							
Course Outcomes	On the completion of the course, the student will be able to CO1: Know about the basics of news. CO2: Know about the reporting. CO3: Know about the writing and editing. CO4: Know about the different pages of newspapers.							
Examination Mode	Theory							
	Continuous Assessment				**MSE**	**MSP**	**ESE**	**ESP**
Assessment Tools	**W Quiz**	**SAP**	**ABL/PBL**	**Lab Performance**				
Weightage	**10**	**10**	**5**	**-**	**25**		**50**	
Syllabus								**CO Mapping**
Unit 1	News Basics							CO1
•	News: meaning, concept & process and types.							
•	Sources, characteristics, elements & values of news							
•	Structure of a news story: Inverted pyramid etc, Organizing a news story5W's and 1H							
•	Journalistic jargon including dateline, credit line, by-line, print line, Flag, Masthead etc.							

•	Various news beats health, crime, sports, education, etc.	
Unit 2	News and Reporting	CO2
•	Reporting meaning, types, Principles, functions and responsibilities and techniques of reporting.	
•	Problems in reporting, Qualities & responsibilities of the reporter, yellow journalism and Citizen journalism	
•	News Agencies and its types, functions and role of news agencies	
•	News reporting, types, reporting categories	
•	Reporting for print, electronic and digital media	
Unit 3	Wwriting and editing	CO3
•	Different forms of writing, Modes of writing &Structure of news report,	
•	Writing for Print, Electronic and Digital Media.	
•	Editing: Nature and need for editing, Principles of editing, editorial desk, functions of editorial desk.	
•	Qualities and role of an editor, guidelines for editing,	
•	Editing for Print, electronic and digital media	
Unit 4	Editorial page	CO4
•	Headlines: its types, functions & importance.	
•	Editorial: its types, functions & importance.	
•	Feature: its types, functions & importance.	
•	Article: its types, functions & importance.	
•	Letter to editor, Op-ed page, pullouts, columns, style and middles.	

Reference Book/s	1. An Introduction to Journalism: Essential techniques and background knowledge by Richard Rudin (Author), Trevor Ibbotson (Author) 2. Introduction to Journalism and Mass Communication by Finlay Webb Hardcover – 1 January 2018 by Finlay Webb (Author) 3. Handbook of Journalism and Mass Communication by Vir Bala Aggarwal and V.S Gupta	

In hours			
L	T	P	Credit
1	0	4	3

Course Code	MCJ151							
Course Title	**Professional Photography**							
Course Outcomes	On the completion of the course, the student will be able to CO1: Know about the basics of camera. CO2: Know about the different camera lens and lighting. CO3: Know about the different types of photography. CO4: Do practices of Photo Editing on different software.							
Examination Mode	Theory + Practical							
	Continuous Assessment				**MSE**	**MSP**	**ESE**	**ESP**
Assessment Tools	**W Quiz**	**SAP**	**ABL/ PBL**	**Lab Performance**				
Weightage	**10**		**5**			**25**	**25**	**35**
Syllabus							**CO Mapping**	
Unit 1	Camera Basics						CO1	
•	Construction of a simple camera							
•	Camera controls in a SLR and DSLR							
•	Introduction to lighting equipment and techniques							
•	Basic steps in film and digital based photography							
Unit 2	Camera lens and lightning						CO2	

•	Freezing motion, Panning shot with background blur. Lens	
•	Shallow & Deep depth of field and Perspective and angle of view	
•	Mmanaging Deep & shallow depth of field and Perspective and angle of view Light Meter in.	
•	Using various modes of TTL metering: Using On camera flash Sync. Speed, Studio Flash, Shooting with multiple flash and Mixed light conditions.	
•	Understanding the role of colour temperature in photography, setting white Balance and Shooting in mixed temperature lightt	
Unit 3	Types of photography	CO3
•	News Photography, Sports Photography, Nature photography, Portrait photography, Fashion photography and advertisement photography.	
•	Slow- & fastmoving objects, Landscape, Architecture, Night photography, Children's, Nature Animal and Birds, Product and Fashion	
•	Portrait, Studio photography,	
Unit 4	Photo editing	CO4
•	Adobe Photo shop Elements, Photo shop CC (Creative Cloud).	
•	Basics of photo editing, handling and cataloging images using Adobe Light room and photo shop Portrait, Studio photography,	
•	Correcting imperfect images: Picture orientation, Cropping, Levels, Altering brightness, contrast, red eye, etc.	
Reference Book/s	1.The Digital Photography Book by Scott Kelby	

	2.Understanding Exposure Book by Bryan Peterson	

In hours			
L	T	P	Credit
1	0	4	3

Course Code								
Course Title	**Library Information Sciences**							
Course Outcomes	On the completion of the course the student will be able to CO1: Demonstrate the concept of Libraries and its role in education and research CO2: Acquaint themselves with various print and electronic Information Sources and its management systems CO3: To acquaint with various types of Reference & Information Services and evaluation of some indexing & abstracting databases. CO4: Comprehend the significance and implementation of various knowledge development components in research and to locate information from various e-resources and databases.							
Examination Mode	Theory + Practical							
	Continuous Assessment				**MSE**	**MSP**	**ESE**	**ESP**
Assessment Tools	**W Quiz**	**SAP**	**ABL/ PBL**	**Lab Performance**				
Weightage	**10**		**5**			**25**	**25**	**35**
Syllabus							**CO Mapping**	
Unit 1	Introduction to Library						CO1	
•	Introduction & meaning							
•	Five Laws of Library Science							
•	Types of Libraries							
•	Role of Libraries in Education							
Unit 2	Knowledge Organization						CO2	
•	Concept & Need of Knowledge Organization							

•	Sources of Information	
•	Classification Systems	
•	Web OPAC	
Unit 3	Reference & Information Services	CO3
•	Concept and meaning	
•	Reference Sources & Services	
•	Information & Documentation Services	
•	Indexing & Abstracting: Databases & Services	
Unit 4	Knowledge Development & Research	CO4
•	Literature Survey	
•	Citations: Techniques	
•	References & Bibliography Preparation	
•	E-Resources & databases: Inf. Access & Retrieval Services	
Text Books	1.Murty, S. & Sonal, S. Information Services, Library Education & Research in India. RBSA Pub. 2. Gurdev Singh. Information Sources, Services and Systems. PHI Learning. 3. Bates, M.J. (2012). Understanding information retrieval systems: management, types and standards. Boca Raton, FL: CRC 4. Prajapati, B.G. (2013). Library and information science. New Delhi: Discovery Pub. House. 5. Bawden, D., & Robinson, L. (2013). Introduction to information science. Chicago:	
Reference Books	1. Miller, J.B. & Barbara. Internet Technology & Inf. Services 2. Kothari, C.R. (2004). Research Methodology: Methods and Techniques. (2nd ed.). New Delhi: New Age International	

In hours			
L	T	P	Credit
1	0	2	2

Course Code					
Course Title	Personality Enhancement				
Course Outcomes	By the end of the course the students will be able to: CO1: Acquaint themselves with their own abilities and develop employable personalities. CO2: Develop interpersonal skills, leadership qualities and team working skills for becoming successful professionals. CO3: Think creatively and develop career plans based on their competencies. CO4: Develop problem solving skills, stress management ability and will be able to efficiently resolve conflict.				
Examination Mode	Theory+ Practical				
Assessment Tools	QUIZ	ABL/PBL	MSP	ESE	ESP
Weightage	10	5	20	35	30
Syllabus					**CO Mapping**
Unit 1	**Self managerial skills**				
•	Personality				1
•	Professional Appearance and grooming				1
•	Success and Failure: causes, means to overcome it				1
•	Self awareness (SWOT)				1
•	Goal setting (SMART)				1
Unit 2	**Interpersonal skills**				
•	Meaning and development of Interpersonal skills				2
•	Attitude				2
•	Do's and don'ts on your first job or internship				2

•	Time management and prioritization	2
•	Team working skills	2
Unit 3	**Motivation and creativity**	
•	Motivation	3
•	Competency mapping	3
•	Self esteem	3
•	Creativity	3
•	Influence of role models	3
Unit 4	**Other aspects of personality**	
•	Manage workplace Conflict	4
•	Stress management	4
•	Problem solving skills	4
•	Work ethics	4
•	Office Etiquette and Professionalism	4
Reference Book/s	1.Swami Vivekananda, *Personality Development*,Published by Advaita Ashrama,2009.	
	2.Manika *Positivity A Way of Life*, Published by Orient Blackswan Pvt Ltd, 2013.	
	3.Robert Heller, *Effective Leadership (Essential Manager)*, Published by PenguinUK,1999.	

In hours			
L	T	P	Credit
0	0	4	2

Course Code			
Course Title	Personality Development		
Course Outcomes	On the completion of the course the student will be able to CO1: Understand their personality well CO2: manage their time well and motivated to do well in all areas CO3: Manage their stress well and able to cope with it effectively. CO4: Able to face interviews and groom their self well.		
Examination Mode	Theory/ Practical/ Theory + Practical		
Assessment Tools	**Continuous Assessment** **Lab Performance**	**MSP**	**ESP**
Weightage	**20**	**30**	**50**

Syllabus		CO Mapping
Unit 1	Introduction to Personality Development	1
•	The concept of personality - Dimensions of personality – Theories of Freud & Erickson-Significance of personality development.	1
•	Understanding feeling and emotions- primary feelings and secondary feelings, Self- regulating emotions	1
•	IQ, EQ, & SQ	1
•	Exercise	1
•	Exercise II	1
Unit 2	Motivation & Time Management	
•	Concept of motivation - Significance – Intrinsic and extrinsic motivation. Importance of self- motivation- Factors leading to de-motivation	2
•	Maslow's Self- actualization theory of Motivation. Importance of Time Management, Values & Beliefs.	2

•	Goals & Benchmarks- the Ladders of success, Prioritizing's your To Do's	2
•	Exercise	2
Unit 3	Stress and Conflict Management	
•	Introduction and types of Stress, role of personality in stress	3
•	Difference between Frustration, Conflict and Anxiety. Common stressors for students.	3
•	Coping mechanisms of Stress.	3
•	Exercise	3
Unit 4	Interview Skills and Social Etiquettes	
•	Types of interviews. Ensuring success in job interviews. Resume writing.	4
•	Exercise- Mock Interviews	4
•	Self -Grooming, Apparel according to the different situation, tips for impressive or smart dressing.	4
•	Make up tutorials.	4
Text Books	1. Soft skills & Employability Skills. Sabina Pillai, Agna Fernandez. 2. Everyday Etiquette: How to navigate 101 common and uncommon social situations by Patrica Rossi.	
Reference Books	1. Building career success skills by Theodore Pietrzak, Mike Fraum. 2. Creative problem solving: An Introduction by Donald J Treffinger, Scott G.Isaksen, K. Brian. 3. Positive Psychology: The science of happiness and human strengths by Alan Carr 4. Personality Development by John Aurthe	

In hours			
L	T	P	Credit
01		02	02

Course Code					
Course Title	Behavioral & life skills				
Course Outcomes	On the completion of the course the student will be able to CO1: To make the student more self-aware CO2: To make the student learn strategies to manage self & emotion CO3: To bring resilience and well-being CO4: To learn to handle psychological crisis				
Examination Mode	Theory + Practical				
Assessment Tools	Written Quiz	ABL/PBL	MSP	ESE	ESP
Weightage	10	5	20	35	30
Syllabus					**CO Mapping**
Unit 1	**Relation with self**				
•	Busting myths related to Mental Health				1
•	Meaning of Fear, anxiety, sadness (mild, moderate, severe)				1
•	Meaning of predisposing and precipitating factors				1
•	Know your triggers and patterns of behavior				1
Unit 2	**Know your emotions& attachment styles**				
•	Meaning of Emotion and types of emotions				2
•	Theories of emotion and Emotional Intelligence (Daniel Goleman)				2
•	Theories of attachment styles				2

•	Know your attachment patterns and their impact on interpersonal relationships	2
Unit 3	**Building resilience and well- being**	
•	Finding solid footing in times of stress, by tapping into inner support. When you feel alone, it is important to find support, either externally or internally. This session will include a technique to find internal support.	3
•	Looking outward. Resilience when dealing with others. The second aspect of resilience hinges on how you deal with others. When you are ready to bounce back, can you pull others along? When others are causing the stress, can you face them constructively? And, when others in distress need your support, can you offer it?	3
Unit 4	**Psychological first-aid**	
•	Recognizing signs & symptoms	4
•	Guided Meditation, Imagery, JPMR, Traatak	4
•	Empathetic and Active listening	4
•	Assertiveness Training	4
•	Disputing Irrational cognitions	4
Text Book/s	1. Psychology by Robert A. Baron 2. Emotional Intelligence by Daniel Goleman	
Reference Book/s	1.APA Dictionary of Psychology by Gary R. Vandenbos 2. Introduction to Psychology by Morgan and King 3. Psychology by Passer and Smith	

In hours			
L	T	P	Credit
2	0	0	2

Course Code					
Course Title	Global Citizenship in Higher Education				
Course Outcomes	On the completion of the course the student will be able to CO1: To instill among the learners a deep-rates pride in being Indian. CO2: To develop knowledge, skill, values to be committed to human rights. CO3:To enable the learners to meet contemporary global Challenges. CO4: To make learners active promoters of peaceful, tolerant, inclusive, secure and sustainable societies. CO5: To enable the learners to attain a holistic and multidisciplinary education. CO6: To help the learners to promote sustainable development and sustainable lifestyle, human rights, gender equality, global citizenship and appreciation of cultural diversity.				
Examination Mode	Theory				
	Continuous Assessment				
Assessment Tools	Quiz	Assignment	ABL/PBL	MSE	ESE
Weightage	10	10	5	25	50
Syllabus					**CO Mapping**
Unit 1					
•	The concept of Global Citizenship and Global Citizenship Education.				1
•	Aims of Global Citizenship Education: Justice, Equality, Dignity and Respect.				2
•	Problem Solving Skills- Applying the learner's capability to solve different kinds of problems e.g. social, economic, political and family etc.				2

•	Citizenship in Indian ethos- it is all encompassing horizontal constant of citizenship- Vasudhaiva Kutumbakam.	1
Unit 2		3
•	Global Governance: Local, National and global issues, interconnectedness and interdependence.	3
•	Cultural Diversity and tolerance: about honoring diversity in terms of language, ethnicity, race, gender, religion and region.	3
•	Gender Equality: Addressing the wider issue of gender equality by formatting new and unbiased attitude.	3
Unit 3		
•	Human Right Education: Human Rights Fundamental Freedoms Prevention of human rights violations Equipping the people with awareness	4
•	Peace and Non-Violence: Education about peace and peace-building, conflict-prevention, friendly relations	4
Unit 4		
•	Climate: Climate Changes Combating climate changes Changes in attitudes and behaviors	5
•	Environmental Sustainability: Focus on responsible interactions with the Environment Promote Environmental quality Protecting the Earth, Nature and Natural Resources Protecting Biodiversity, Forest and Wildlife.	6

Text Book/s	1. Education Global Citizenship in India and Pakistan; Arshad Masood Hashmi. 2. Introduction to Global Citizenship Education; Mukherjee, Mousumi et al	
Reference Book/s	3. Achebe Chinua: (1994) Things Fall Apart 4. Coetzer, J.M. (1980) Waiting for the Barbarians 5. Garzon, Mark (2010) American Citizen, Global Citizen 6. Indian Philosophy- Dr. R.S. Radhakrishnan 7. Rethinking of education, towards a global common good, UNESCO 8. Golmohamad, M (2008) global citizenship from theory to practice 9. Education for a New World; Maria Montessori 10. Global Citizenship Education; William Gaudelli	

In hours			
L	T	P	Credit
1	0	2	2

Course Code					
Course Title	Communication Skills				
Course Outcomes	On the completion of the course the student will be able to CO1: Communicate effectively, identify and resolve barriers to communication. CO2: Develop listening and speaking skills to articulate words and sentences clearly and efficiently. CO3: Develop reading skills and write efficiently in a professional context. CO4: Perform efficiently in interviews, presentations, group discussions etc. through thorough practice provided during the course.				
Examination Mode	Theory + Practical				
	Continuous Assessment				
Assessment Tools	Quiz	ABL/PBL	MSP	ESE	ESP
Weightage	10	5	20	35	30
Syllabus					**CO Mapping**
Unit 1	**Communication: Process and Barriers**				
•	**Grammar**: Tenses and Parts of Speech				CO1
•	**Communication**: Introduction and Importance Verbal and Non-verbal communication.				CO1
•	**The Communication Process:** Source, message, channel, receiver, feedback, environment, context and interference; Barriers to Communication.				CO1

•	**Indianism:** Teacher will introduce the concept of Indianism through detailed analysis of 'The Patriot' by Nissim Ezekiel.	CO1
•	**Role-playing:** Teacher will guide teams of students to act-out roles to explore a particular scenario related but not limited to sales meeting, interviews, emotionally difficult conversations, conflict resolution etc.	CO1
Unit 2	**Listening and Speaking Skills**	
•	**Voices:** Active and Passive	CO2
•	**Listening Skills**: Introduction, Self-awareness, Active-listening, becoming an active listener, listening in difficult situations.	CO2
•	**Practicing listening skills:** Students will be shown movie-clippings, documentaries on a variety of topics. This activity shall be followed by a listening quiz and discussion.	CO2
•	**Speaking Skills**: Introduction, Active-speaking, becoming an active-speaker, Elements: Fluency, Vocabulary, Grammar, Pronunciation.	CO2
•	**Practicing speaking skills:** Students will be asked to present orally the topics of their choice in the class. Subsequently, impromptu topics shall be given to the students.	CO2
Unit 3	**Reading and Writing Skills**	
•	**Reading Skills:** Introduction, Types: Skimming, scanning, extensive and intensive reading, Strategies to develop a good reading speed.	CO3
•	**Practicing reading skills**: A comprehensive reading of 'Sexism in English' by Alleen Pace Nilsen in the class followed by reading comprehension exercises. In addition to this, students shall be encouraged to develop a reading habit.	CO3
•	**Writing Skills:** Introduction, Formal and Informal Writing, Writing Effectively: Knowing your audience, organizing the message, Shades of meaning, Clarity and Brevity.	CO3
•	**Practicing writing skills:** Students will practice writing skills by writing • Memos • Emails • Letters • Reports	CO3
Unit 4	**Industry Readiness**	
•	**Interviews:** Purpose of an interview Frequently Asked Questions and how to answer them,	CO4

	Preparation for an interview.	
•	**Group Discussions:** Communication skills used in group discussion, how to give your opinion, Interpersonal Skills assessed in group discussion.	CO4
•	**Curriculum Vitae and Cover Letter:** Importance, how to write, what to include.	CO4
•	**Group discussions and mock interviews** in the class to prepare the students well for placements.	CO4
Text Book/s	1. Kumar, Sanjay and Pushp Lata. Communication Skills. New Delhi: Oxford University Press, 2015. 2. Ezekiel, Nissim. Collected Poems 1952-1988. New Delhi: Oxford University Press,1999. 3. Koneru, Aruna. Professional Communication. Delhi: McGraw, 2008. 4. English Grammar & Composition, Wren and Martin.	
Reference Book/s	1. Oxford Advanced Learner's Dictionary, 10th edition. Oxford University Press, 2020. 2. Sharma, R.C. and Krishna Mohan. Business Correspondence and Report Writing.Delhi: McGraw, 2013. 3. Mahanand, Anand. English for Academic and Professional Skills. Delhi: McGraw,2013. 4. Dulai, Surjit S. "NISSIM EZEKIEL and the Evolution of Modern Indian English 5. Poetry: A Chronology". Journal of South Asian Literature,2000. 6. Murphy, Raymond. English Grammar in Use. Delhi: Cambridge University Press, 2015.	

In hours			
L	T	P	Credit
1	0	2	2

Course Code					
Course Title	**Cambridge English I**				
Course Outcomes	On the completion of the course the student will be able to CO1: Develop effective listening skills to comprehend spoken English in various contexts and accents, employing strategies such as skimming, scanning, and understanding implicit meaning. CO2: Improve spoken communication skills by expressing ideas fluently, engaging in discussions, role-plays, and collaborative tasks, and applying effective communication strategies. CO3: Enhance reading comprehension abilities to understand and interpret diverse written materials using techniques like skimming, scanning, and critical reading to extract essential information. CO4: Develop writing proficiency to produce well-structured, coherent written pieces, demonstrating accurate grammar usage, vocabulary selection, and effective organization.				
Examination Mode	Theory + Practical				
	Continuous Assessment				
Assessment Tools	**Quiz**	**ABL/PBL**	**MSP**	**ESE**	**ESP**
Weightage	**10**	**5**	**20**	**35**	**30**
Syllabus					**CO Mapping**
Unit 1	**Basic communication Part 1 (Chapter1-4)**				
•	**A. Listening: Introduction to Listening I**				1

	Listening to people talk about their past, Listening to a description of a transportation system, Listening to people talk about capsule hotels, etc. **B. Speaking: Basic Conversation Skills I** Introducing yourself; Talking about yourself; Exchanging personal information; Talking about transportation and transportation problems; Evaluating city services; Asking for and giving information; describing positive and negative features; Making comparisons; Expressing wishes; talking about food; Giving step-by-step instructions, etc. **C. Reading: Introduction to Reading Skills and Comprehension Strategies I** Reading about the life of a Mexican painter, Reading about the happiest cities in the world, Reading about living without money, Reading about the history of pizza, etc **D. Writing: Introduction to Basics of Writing I** Writing a paragraph about your childhood, Writing an online post on a community message board about a local issue, Writing an email comparing two living spaces, etc **E. Grammar: An Introduction to the Fundamentals of English Grammar I** Past tense; *used to* for habitual actions, Expressions of quantity with count and noncount nouns: *too many*, *too much*, *fewer*, *less*, *more*, *not enough*; indirect questions from Wh-questions, Evaluations and comparisons with adjectives: *not . . . enough*, *too*, *(not) as . . . as*;	

	evaluations and comparisons with nouns: *not enough . . . ,too much/many . . . , (not) as much/many . . . as*; *wish.*	
	F. Self-paced practice with Online Workbook (Units 1-4)	
Unit 2	**Basic communication Part 1 (Chapter5-8)**	
•	**A. Listening: Listening for Basic Information** Listening to travel advice, Listening to the results of a survey about family life, Listening to a radio program, listening to people give suggestions for using technology, Listening to a description of Carnival in Brazil, etc. **B. Speaking: Vocabulary Development for Effective Conversation** Speaking about vacation plans; giving travel advice; planning a vacation, Making requests; agreeing to and refusing requests; complaining; apologizing; giving excuses, giving instructions; giving suggestions, Talking about holidays, festivals, customs, and special events, etc. **C. Reading: Introduction to Reading Skills and Comprehension Strategies II** Reading about unusual vacations, Reading about unusual hotel requests, Reading about sharing economy, Reading about interesting New Year's customs, etc. **D. Writing: Introduction to Basics of Writing II**	2

	Writing a message making a request, Writing a message asking for specific favors, and Writing an entry on a travel website about a cultural custom, etc. **E. Grammar: An Introduction to the Fundamentals of English Grammar II** Future with *be going to* and *will*; modals for necessity and suggestion: *must*, *need to*, *(don't) have to*, *ought to*, *-'d better*, *should (not),* Two-part verbs; *will* for responding to requests; requests with modals and *Would you mind . . . ?,* Infinitives and gerunds for uses andpurposes; imperatives and infinitives for giving suggestions,	
•	F. Self-paced practice with Online Workbook (Units 5-8)	2
Unit 3	**Basic communication Part III (Chapter9-12)**	
•	**A. Listening: Listening for Specific Information** Listening to people talk about changes, Listening to people talk about their job preferences, Listening to descriptions of monuments, listening for information about a country, Listening to stories about unexpected experiences, etc. **B. Speaking: Descriptive Speaking I** Talking about change; comparing time periods; describing possible consequences; describing abilities and skills; describing personality traits; talking about landmarks and monuments; describing countries; discussing facts, Describing recent past events and experiences, etc.	3

	C. Reading: Introduction to Reading Skills and Comprehension Strategies III Reading about a town's attempt to attract new residents, Reading about understanding cultural differences in an international company, Reading about unusual museums, Reading about an unusual rock band, etc **D. Writing: Introduction to Basics of Writing III** iting a paragraph describing a person's past, present, and possible future, Writing an online cover letter for a job application, Writing an introduction to an online city guide, Writing a description of a recent experience **E. Grammar: An Introduction to the Fundamentals of English Grammar III** Time contrasts; conditional sentences with *if* clauses, Gerunds; short responses; clauses with *because,* Passive with *by* (simple past); passive without *by* (simple present); past continuous vs. simple past; present perfect continuous.	
•	**F.** Self-paced practice with Online Workbook (Units 9-12)	3
Unit 4	**Basic communication Part 1V (Chapter13-16)**	
•	**A. Listening: Listening for Sequencing** Listening for opinions; listening to a movie review; listening to people talk about the meaning of signs, Listening to people talk about predicaments; listening to a call-in radio show, etc.	4

	B. Speaking: Descriptive Speaking II Describing movies and books; talking about actors and actresses; asking for and giving reactions and opinions, Interpreting body language; explaining gestures and meanings; Speculating about past and future events; describing a predicament; giving advice and suggestions, Reporting what people said; making polite requests; making invitations and excuses, etc. **C. Reading: Introduction to Reading Skills and Comprehension Strategies IV** Reading about unpleasant experiences actors put themselves through, Reading about idioms and their meaning, Reading an online advice forum, Reading about taking a sick day, etc. **D. Writing: Introduction to Basics of Writing IV** iting a movie review, Writing a report about people's responses to a survey, etc **E. Grammar: An Introduction to the Fundamentals of English Grammar IV** Participles as adjectives; relative pronouns for people and things, Modals and adverbs: *might*, *may*, *could*, *must*, *maybe*, *perhaps*, *probably*, *definitely*; permission, obligation, and prohibition, Unreal conditional sentences with *if* clauses; past modals, Reported speech: requests and statements	
•	**F. Self-paced practice with Online Workbook (Units 13-16)**	4
Text Book/s	***Interchange Level 2 - 5th edition*** published by Cambridge University Press	

In hours			
L	T	P	Credit
1	0	2	2

Course Code					
Course Title	**Cambridge English II**				
Course Outcomes	On the completion of the course the student will be able to CO1: Proficiently handle diverse communication situations, including listening to complaints, news stories, and podcasts; discussing careers and experiences; expressing emotions and cultural expectations; and writing critical online reviews. CO2: Consolidate advanced grammar and vocabulary knowledge for accurate and appropriate language usage. CO3: Utilize comprehensive audio and video resources to develop effective language comprehension and production. CO4: Effective Communication in Diverse Contexts: Demonstrate fluency, coherence, and confidence in expressing complex ideas, drawing conclusions, discussing hypothetical situations, and describing qualities for success.				
Examination Mode	Theory + Practical				
	Continuous Assessment				
Assessment Tools	**Quiz**	**ABL/PBL**	**MSP**	**ESE**	**ESP**
Weightage	**10**	**5**	**20**	**35**	**30**
Syllabus					**CO Mapping**
Unit 1	**Advanced communication (Chapter1-4)**				

•	**Listening: Advanced Listening I** Listening for descriptions of people; listening for opinions; listening to people making, accepting, and declining requests; listening to messages and a podcast. **Speaking – Advanced Speaking I** Describing personalities; expressing likes and dislikes; agreeing and disagreeing; complaining; talking about possible careers; deciding between two jobs, Making direct and indirect requests; accepting and declining requests, Narrating a story. **Writing / Reading – Advanced Reading/ Writing I** Writing a description of a good friend, Reading about unusual social networking sites, Writing about two career choices, Reading about different types of workplaces, Writing a message with requests, Writing a personal account, Reading about the reliability of online content topics **Grammar – Advanced English Grammar I** Relative pronouns as subjects and objects; *it*clauses + adverbial clauses with *when;*Gerund phrases as subjects and objects; comparisons with adjectives, nouns, verbs, and past participles, Requests with modals, *if* clauses, and gerunds; indirect requests, Past continuous vs. simple past; past perfect _____	1

	Self-paced practice with Online Workbook (Units 1-4)	
Unit 2	**Advanced Communication (Chapter5-8)**	
	Listening – ADVANCED LISTENING II Listening for information about living abroad; listening to opinions about customs, listening to complaints; listening to people exchange things in a store; listening to a conversation about a "throwaway culture," Listening to environmental problems; listening for solutions, listening to a conversation with a guidance counselor; listening for additional information. **Speaking – ADVANCED SPEAKING II** Talking about moving abroad; expressing emotions; describing cultural expectations; giving advice; describing problems; making complaints; explaining something that needs to be done; identifying and describing problems; coming up with solutions; asking about preferences; discussing different skills to be learned. **Writing/ Reading – ADVANCED READING/ WRITING II** Writing a pamphlet for tourists, reading about moving to another country, Writing a critical online review, Reading about a problem with a ride-sharing service, Writing a post on a community website, Reading about a creative solution to lionfish on St. Lucia, Writing about a skill, Reading about different studying styles **Grammar - ADVANCED GRAMMAR II** Noun phrases containing relative clauses; expectations: *the custom to*, (*not*) *supposed to*, *expected to*, (*not*) *acceptable to; d*escribing problems with	2

	pastparticiples as adjectives and with nouns; describing problems with *need* + gerund, *need* + passive infinitive, and *keep* + gerund, Passive in the present continuous and present perfect; prepositions of cause; infinitive clauses and phrases, *Would rather* and *would prefer*; *by* + gerund to describe how to do things.	
•	Self-paced practice with Online Workbook (Units 5-8)	2
Unit 3	**Advanced communication (Chapter9-12)**	
•	**Listening – ADVANCED LISTENING III** Listening to New Year's resolutions, listening for dates and time periods; listening to predictions, Listening to descriptions of important events; listening to regrets and explanations, Listening for features and slogans **Speaking – ADVANCED SPEAKING III** Talking about things you need to have done; asking for and giving advice or suggestions; talking about historical events; talking about things to be accomplished in the future, describing milestones; describing turning points; describing regrets and hypothetical situations; giving reasons for success; interviewing for a job; talking about ads and slogans. **Writing / Reading – ADVANCED READING/ WRITING III** Writing a message of advice, reading about young scientist Jack Andraka, writing a biography, Reading about futurists and their predictions for the year 2050, Writing a message of apology, Reading about a conflict with a friend and advice on how to fix it, Writing a TV or web commercial, Reading about what makes some advertisements memorable, **Grammar – ADVANCED GRAMMAR III** Get or have something done; making suggestions with modals + verbs, gerunds, negative questions, and infinitives; referring to time in the past with	3

	adverbs and prepositions: *during*, *in*, *ago*, *from…to*, *for*, *since*; predicting the future with *will*, future continuous, and future perfect, Time clauses: *before*, *after*, *once*, *the moment*, *as soon as*, *until*, *by the time*; expressing regret with *should* (*not*) *have* + past participle; describing hypothetical situations with *if* clauses + past perfect and *would*/*could have* + past participle.	
•	Self-paced practice with Online Workbook (Units 9-12)	3
Unit 4	**Advanced communication (Chapter13-16)**	
•	**Listening – ADVANCED LISTENING IV** Listening to explanations; listening for the best solution, Listening for parts of a movie, Listening for solutions to everyday annoyances; listening to issues and Opinions, Listening to past obstacles and how they were overcome, listening for people's goals for the future **Speaking – ADVANCED SPEAKING IV** Drawing conclusions, offering explanations; describing hypothetical events; giving advice for complicated situations, Describing how something is done ormade; describing careers in film, TV, publishing, gaming, and music, Giving opinions for and against controversial topics; offering a different opinion; agreeing and disagreeing, Giving opinions about inspirational sayings; talking about the past and the future **Writing / Reading – ADVANCED READING/ WRITING IV**	4

	Writing about a complicated situation, Reading about unexplained events, Writing about a process, Reading about what the job of film extra is like, Writing a persuasive essay, Reading about plagiarism in the digital age, Writing a personal statement for an application, Reading about the athlete Michael Edwards **Grammar - ADVANCED GRAMMAR IV** Past modals for degrees of certainty: *must (not) have*, *may (not) have*, *might (not) have*, *could (not) have*; past modals for judgments and suggestions: *should (not) have*, *could (not) have*, *would (not) have,* The passive to describe process with *is*/*are* + past participle and modal + *be* + past participle; defining and non-defining relative clauses, Giving recommendations and opinions with passive modals: *should be*, *ought to be*, *must be*, *has to be*, *has got to be*; tag questions for opinions, Accomplishments with the simple past and present perfect; goals with the future perfect and *would like to have* + past participle	
•	Self-paced practice with Online Workbook (Units 13-16)	4
Text Book/s	***Interchange Level 3 - 5th edition*** published by Cambridge University Press	

In hours			
L	T	P	Credit
2	0	0	2

Course Code					
Course Title	Technical Report Writing				
Course Outcomes	On the completion of the course the student will be able to CO1: The students will be able to identify the different types of technical writings and will also able to recognize technical from non-technical writing. CO2: The students will be able to relate to the steps for technical writing and report structure. CO3: The students will be able to apply their knowledge of technical writing to construct technical reports and develop presentations. CO4: The students will be able to analyze and appreciate the different most frequently used technical writing manuals.				
Examination Mode	Theory				
Assessment Tools	Quiz	Assignment	ABL/PBL	MSE	ESE
Weightage	10	10	5	25	50
Syllabus					**CO Mapping**
Unit 1	**Introduction to Technical Writing**.				CO1
•	**What is technical writing?**				
•	Examples of technical writing – white papers, journal articles, training materials, instructional manuals, policy and procedure manuals, process manuals, user manuals, reports of analysis and design, instructions for assembling and using a product.				
Unit 2	**Technical writing Process and Ethics**				CO2
•	Emphasis on the use of planning, clarity, shortness, simplicity, word choice and organization in technical writing.				
•	**Technical writing ethics**				

•	**Formal technical report structure –** universal aspects of report, report format (title, abstract, table of content)	
Unit 3	**Components of technical report**	CO3
•	introduction, background theory, analysis/design, procedure, result and discussion, conclusion, citation, appendix.	
•	**Technical presentation**: basics of informal and formal presentation	
Unit 4	**Introduction to the writing style guides/manuals**	CO4
•	Chicago manual of style	
•	APA style guide	
•	MLA style guide	
•	The elements of style	
•	ACS style guide	
•	Harvard style guide.	
Reference Books	1.Technical Writing 101: A Real-World Guide to Planning and Writing Technical Documentation - by Alan S. Pringle and Sarah S. O'Keefe 2.The Elements of Style - William Strunk Jr. and E.B. White 3. The Chicago Manual of Style 4. Publication Manual of the American Psychological Association (APA) 5. MLA Handbook - The Modern Language Association of America	
Online Resources:	1. The Purdue Online Writing Lab (OWL) 2. Society for Technical Communication (STC)	

In hours			
L	T	P	Credit
2	0	0	2

Course Code					
Course Title	**Leadership Management**				
Course Outcomes	On the completion of the course the student will be able to: CO1: Understanding the differences and balancing between leadership& management roles and leadership style that aligns with organizational goals and values. CO2:Appreciating Motivation for productive team performance through effective communication and coaching techniques CO3:Understanding of creating the vision, mission and strategic plan of the organisation CO4:Preparing the change management plan of the organisation and measuring its effectiveness				
Examination Mode	Theory				
Assessment Tools	Quiz	Assignment	ABL/PBL	MSE	ESE
Weightage	10	10	5	25	50

Syllabus		**CO Mapping**
Unit 1	**Leadership and Management**	CO1
•	Understanding of the terms 'Management' and 'Leadership', Exploring individual leadership styles and personality traits, Situational leadership	CO1
•	Four ways of leading (leadership approach), Four ways of assessing your staff – maturity, Illustrations and examples on What type of leadership approach should you use, understanding your personality type, Complete the on-line personality test to identify your personality type and task-based activity.	CO1
•	Leadership approaches; Visionary Leader, Coaching Leader, Affiliative Leader, Democratic Leader, Pacesetting Leader, Commanding Leader.	CO1
•	"20-60-20" Rule of Leadership, Transformational leadership,Ethical leadership,Task based activity on how you can demonstrate ethical leadership in your current role.	CO1
Unit 2	**Motivational Theories**	CO2

•	To develop an understanding of how important motivation is in fostering good morale and high-quality performance from all team members	CO2
•	Establish practical strategies to motivate your team, identify common de-motivators and prevent these from attacking morale	CO2
•	Improve your understanding of the unique needs of individuals, theories of Motivation; Frederick Herzberg, Douglas McGregor, Victor Vroomand Charles Handy	CO2
Unit 3	**Vision, Mission and Strategic Planning**	CO3
•	Vision & Mission; what should be in Vision & Mission statements, Task based activity on vision & Mission statements to appreciate the underlying purpose, business and values, Task on identify the key 'themes' which would be included in the vision for your own organization. Develop these themes into a written vision and may even be the vision you wish to achieve through your change project	CO3
•	Case studies on few strategic plans, Review of approaches to Strategic Plan structure; Context, where are we now? What will we do?	CO3
•	Strategic actions:what we are actually going to do, Strategic outputs:the vision expressed in measurable units, Task on proposing a number of strategic actions and strategic outputs referring back to the mission and vision developed earlier.	CO3
Unit 4	**Change Management**	CO4
•	Changing the paradigm, Change management in theory, Change management in practice, Reactions to change, Change management theory, Two popular models; Kurt Lewin and John Kotter	CO4
•	Change project planning, Change project presentation, Change project expectations and assessment, Trainer to give the examples of change programmes, Context of change, task on Complete a change proposal form, Developing the Project Plan, Why change fails and managing risk, Risks when change is not managed effectively, Task on Identifying any potential risks to your change project and what additional activity could you undertake to minimise this risk, Change management project guidelines and reporting procedure.	CO4
Text Book/s	1. Robbins, S.P., Judge, T.A., & Vohra, N. (2016). Organisational Behaviour, Pearson education, 16th ed.	
Reference Book/s	1. Pittino, D. (2022).The Concise Leadership Textbook: Essential Knowledge and Skills for Developing Yourself as a Leader, Econcise Publications. 2. Kotter, J.P. (2012).Leading Change,Harvard Business Review Press.	

In hours			
L	**T**	**P**	**Credit**
1	0	2	2

Course Code					
Course Title	**Creative and Critical Thinking**				
Course Outcomes	On the completion of the course the student will be able to CO1:Understand and explain the conceptual framework of creativity & creative thinking CO2: Explain and use various creativity tools and understand the relevance of creative intelligence CO3: Describe the nature of critical thinking CO4: Understand and apply the importance of creative & critical thinking for problem solving				
Examination Mode	Theory + Practical				
Assessment Tools	Written Quiz	ABL+PBL	MSP	ESE	ESP
Weightage	10	5	20	35	30
Syllabus					**CO Mapping**
Unit 1	**Conceptual framework of Creativity and Creative Thinking**				
11.	Creativity- Meaning, Concept, Characteristics and Objectives.				1
12.	Introduction to the principles of Creativity- Basic Principles, Importance in tackling global challenges, Levels of Creativity				1
13.	Creative Thinking- Meaning and Principles of creative thinking, Role of Creative thinking skills in problem solving, Impact of Limitations (such as rules) on creative thinking, Learning Outcomes of Creative Thinking				1
Unit 2	**Tools and identification of Creativity**				
14.	Identification of Creativity – Creativity tests- Torrance, Baquer Mehdi, Techniques of nurturing creativity				2

15.	Creativity Tools- Mind Mapping, brain storming, Random Words, Role Playing, Story Boarding, 5 W's and 1 H	2
16.	Creative Intelligence- Meaning, components and types of creative intelligence	2
Unit 3	**Framework of Critical Thinking**	
17.	Defining Critical Thinking, Critical Thinking Skills, The Essential Skills	3
18.	Critical Thinking Models - Paul Elder Model & Collegiate Learning Assessment (CLA)	3
19.	The 3 C's: context, credibility and consistency	3
20.	Intellectual Standards, Traits and Elements of Reasoning	3
21.	How not to judge prematurely?	3
22.	The importance of maintaining a broad perspective, acquiring facts, listening and reflecting	
Unit 4	**Creative and Critical Thinking for Problem Solving**	
23.	How to make judgments in a disciplined way, with rationality whilst minimizing emotion	4
24.	Creative Vs Critical Thinking	4
25.	Convergent and Divergent Thinking	4
26.	Creative intelligence tests- WKOPAY, Reverse thinking,Anagram	4
27.	Class based/ real life-based problems or situations to develop creative and critical thinking for practical application	4
Text Book/s	1. Paul, R. and Elder, L., 2019, The Nature and Functions of Critical & Creative Thinking, Rowman & Littlefield.	
Reference Book/s	1. S.K Mangal "Understanding the learner and Teaching-Learning Process" Tondon Publications 2. Martinez, P. 2021, Critical Thinking: Decision Making, Problem Solving and Self Development (Effective Strategies That Will Make You Improve Critical Thinking), Tomas Edwards Publication 3. Bowell, T., Cowan, R. and Kemp, G. (2019) Critical Thinking: A Concise Guide. 5th Edition. Routledge: Abingdon, Oxon; New York, NY 4. Paul, R. and Elder, L., 2019, The Nature and Functions of Critical & Creative Thinking, Rowman & Littlefield	

In hours			
L	T	P	Credit
1	0	2	2

Course Code					
Course Title	Community Engagement Course				
Course Outcomes	On the completion of the course the student will be able to CO1: Gain and understanding of rural life, culture and social realities. CO2:Develop a sense of empathy and bonds of mutuality with local community. CO3:Appreciate significant contribution of local communities to Indian society and economy CO4: Learn to value the local knowledge and wisdom of the community CO5: Identify opportunities for contributing to community's socio-economic improvements				
Examination Mode	Theory + Practical				
	Continuous Assessment				
Assessment Tools	Quiz	ABL/PBL	MSP	ESE	ESP
Weightage	10	5	20	35	30
Syllabus					**CO Mapping**
Unit 1	**Appreciation of Rural Society**				
28.	**Appreciation of Rural Society:** Rural life style, rural society, caste and gender relations, rural values with respect to community, nature and resources, elaboration of "soul of India lies in villages'(Gandhi),rural infrastructure. **Teaching Methodology:** Classroom Discussions				1
29.	**Assignment:** Prepare a map (physical, visual or digital) of the village				1

	you visited and write an essay a boutinter-family relations in that village. **Mode of Assignment Submission:** Written Assignment	
Unit 2	**Understanding rural economy& livelihood**	
30.	**Understanding rural economy & livelihood:** Agriculture, farming, land ownership, water management, animal husbandry, non-farm livelihoods and artisans, rural entrepreneurs, rural markets **Teaching Methodology:** Group Discussions in Class	2
31.	**Assignment:** Describe your analysis of rural household economy, its challenges and possible pathways to address them. **Mode of Assignment Submission:** Written Assignment	2
Unit 3	**Rural Institutions**	
32.	**Rural Institutions:** Traditional rural organisations, Self-help Groups, Panchayatiraj institutions (Gram Sabha, Gram Panchayat, Standing Committees), local civilsociety,local administration**.** **Teaching Methodology:** Classroom Discussions	3
33.	**Assignment:** How effectively are Panchayati raj institutions functioning in thevillage? What would you suggest to improve their effectiveness? Present a casestudy(written oraudio-visual). **Mode of Assignment Submission:** Group presentations of Assignment	3
Unit 4	**Rural Developmental Programmes**	
34.	**Rural Developmental Programmes:**History of rural development in India, current national programmes: Sarva Shiksha Abhiyan, Beti Bachao, Beti Padhao, Ayushman Bharat, Swatchh Bharat, PM Awaas Yojana, Skill India, Grampanchayat Decentralised Planning, NRLM, MNREGA, etc. **Teaching Methodology:** Classroom Discussions	4,5
	Assignment: Describe the benefits received and challenges faced in the deliveryof one of these programmes in the rural community; give suggestions about improving implementation of the programme for the rural poor. **ModeofAssignmentSubmission:** WrittenAssignment	4,5
Books	1. Singh, Katar, Rural Development: Principles, Policies and Management, Sage Publications, New Delhi, 2015.	

	2. A Hand book on Village Panchayat Administration, Rajiv Gandhi Chair for Panchayati Raj Studies, 2002. 3. United Nations, Sustainable Development Goals,2015un.org/sdgs/ 4. M.P.Boraian, Best Practices in Rural Development, Shanlax Publishers, 2016.	
Journals	1. Journals of Rural development, (published by NIRD&PR Hyderabad) 2. Indian Journal of Social Work,(by TISS, Bombay) 3. Indian Journal of Extension Education(by Indian Society of Extension Education) 4. Journal of Extension Education (by Extension Education Society) 5. Fostering Social Responsibility & Community Engagement in Higher Education Institutions in India 6. Kurukshetra(Ministry of Rural Development, GoI) 7. Yojana (Ministry of Information and Broadcasting, GoI)	

Practical/field activities:

The students are required to spend a total of 30 hours in field and select any 5 activities from among the following:

• Interaction with SHG women members, and study of their functions and challenges; planning for their skill building and livelihood activities

• Visit MGNREGS project sites, interact with beneficiaries and interview functionaries at the worksite

• Field visit to Swachh Bharat project sites, conduct analysis and initiate problem solving measures

• Conduct Mission An tyoday a surveys to support under Gram Panchayat Development Plan (GPDP)

• Interactive community exercise with local leaders, panchayat functionaries, grass-root officials and local institutions regarding village development plan preparation and resource mobilization

• Visit Rural Schools /mid- day meal centres, study Academic and infrastructural resources and gaps

• Participate in Gram Sabha meetings, and study community participation

• Associate with Social audit exercises at the Gram Panchayat level, and interact with programme beneficiaries

• Attend Parent Teacher Association meetings, and interview school dropouts Fostering Social Responsibility & Community Engagement in Higher Education Institutions in India

• Visit local Anganwadi Centre and observe the services being provided

• Visit local NGOs, civil society organizations and interact with the staff and beneficiaries,

• Organize awareness programmes, health camps, Disability camps and cleanliness camps

• Conducts oil health test, drinking water analysis, energy use and fuel efficiency surveys
• Raise understanding of people's impacts of climate change, building up community's disaster preparedness
• Organise orientation programmes for farmers regarding organic cultivation, rational use of irrigation and fertilizers and promotion of traditional species of crops and plants
• Formation of committees for common property resource management, village pond maintenance and fishing.