St. Joseph's College of Commerce

(Autonomous)
163, Brigade Road, Bengaluru – 560 025

Accredited with 'A++' Grade (4th Cycle) by the National Assessment and Accreditation Council (NAAC)

Recognized by the UGC as
"COLLEGE WITH POTENTIAL FOR EXCELLENCE"

B.Sc. (Economics, Mathematics, and Data Analytics)

Semester I

Academic year 2024 – 2025

St. Joseph's College of Commerce (Autonomous)
Affiliated to Bengaluru City University

St. Joseph's College of Commerce (SJCC) was formerly a part of St. Joseph's College, established in the year 1882. The Commerce Department was established in the year 1949 and it became an independent college with its own building in Brigade Road in the year 1972.

The college has in its Vision a model for higher education which encourages individuals to dream of a socially just world and in its Mission a strategy to empower individuals in realizing that dream.

With an objective of imparting quality education in multidisciplinary fields of Commerce, Management, Economics, English and Psychology the college has been innovating in all aspects of higher education over a long period of time. These innovations were further bolstered with the granting of autonomous status to the college by UGC in September 2005. From then on, the college has taken a lead in reforming curriculum and syllabus, examination and evaluation pattern and teaching and learning methods through the Board of Studies, the Academic Council and the Governing Council comprising of eminent academicians, industry representatives and notable alumni.

The college has undergone four cycles of NAAC accreditation starting from the year 2000 in which it secured 'five stars', next in the year 2007 an 'A' grade, in the year 2012 again an 'A' grade and recently in February 2021 an 'A++'. It is one of the very few institutions in the country to have secured A++ grade in the fourth cycle under the Revised Accreditation Framework (RAF) and the first college in Karnataka to do so. The college was declared as a 'College with Potential for Excellence' in the year 2010. In 2011 SJCC was recognized as a Research Centre by Bangalore University. The college has been ranked 65th in the National Institutional Ranking Framework (NIRF) ratings of Ministry of Education, Government of India, in 2023 and it has been the only institution from Karnataka to make it consistently to the top 100 in the country.

The college offers diverse programmes in Commerce, Business Administration, Economics and English. Under Commerce Studies it offers B. Com, B. Com (Professional- International Accounting and Finance), B. Com (BPS- Industry Integrated), B. Com (Travel and Tourism), B. Com (Analytics), B. Com (Professional - Strategic Finance), M. Com (Finance & Taxation/ Marketing & Analytics), M. Com (International Business) & M. Com (Financial Analysis). Under Business Administration it offers BBA, BBA (Entrepreneurship) and BBA (Professional- Finance and Accountancy). The college also offers six one-year Post Graduate Diploma programmes. The College offers a B.Sc Economics, Mathematics and Data Analytics Programme and a B.A English, Communicative English and Psychology Programme.

ABOUT THE PROGRAMME:

The B. Sc Economics, Mathematics and Data Analytics programme has been designed to provide a cutting-edge expertise in mainstream economics,math and Data Analytics. 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, psychological, and political issues and explores the full spectrum of Economics, Mathematics and Data Analytics. The transferable skills attained through the programme 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, data analyst, financial consultant, econometrician, banker and look forward to different government positions after successful completion of the programme.
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 programme in is a full-time undergraduate programme of 3 years that aims at providing a programme structure which would retain the 'traditionals' in the programme and equip the students with business acumen necessary to succeed in the professional world.

SALIENT FEATURES OF THREE YEARS B.Sc. ECONOMICS, MATHEMATICS AND DATA ANALYTICS PROGRAMME:

1. The regulations governing The B.Sc Economics, Mathematics and Data Analytics Programme shall be applicable with effect from the Academic year 2024-2025.
2. The B.Sc Economics, Mathematics and Data Analytics Programme shall be structured in a semester mode.
3. The Programme offers a wide range of multidisciplinary courses with exposure to other disciplines, specializations and areas. The programme aptly caters to knowledge, ability, vocational, professional and skill enhancement along with focus on humanities, arts, commerce, management, social, physical and life sciences, mathematics,sports etc.
4. The Programme combinesconceptual understanding with practical engagement through lab courses, national and international field visits, internship, conferences, workshops, seminars, case study analysis, group discussions and research projects.
5. A wide range of Skill Enhancement Courses are offered in the first four semesters to enhance language and communication, logical reasoning, critical thinking, problem solving, data analytics andlife skills.
6. The students will have Deep Specialisation in Economics in the fifth and sixth semester.

I. ELIGIBILITY FOR ADMISSION

- Candidates who have completed the Two-year Pre-universitycourse of Karnataka State or its equivalent are eligible for admission into this Programme.
- Candidates should have mandatorily studied either mathematics or statistics in 11th and 12th.

II. DURATION OF THE PROGRAMME

The duration of the undergraduate programme is ***three- years*** (six semesters) The successful completion of ***Three Years*** undergraduate Programme would lead to ***bachelor's degree with Deep Specialization in Economics.***

III. MEDIUM OF INSTRUCTION

The medium of instruction shall be English.

IV. ATTENDANCE:

a. A student shall be considered to have satisfied the requirement of attendance for the semester, if he/she has attended not less than 85% in aggregate of the number of working periods in each of the courses compulsorily.

b. A student who fails to complete the course in the manner stated above shall not be permitted to take the end semester examination.

V. SUBJECTS OF STUDY: THE COMPONENTS OF CURRICULUM FOR THREE-YEARS UNDERGRADUATE BSC. PROGRAMME

The category of courses and their descriptions are given in the following table.

Category of courses	Objective/ Outcomes
Languages	Language courses equip students with communication skills, critical and creative thinking, familiarity with issues pertaining to society and culture and skills of expression and articulation. They also provide students with a foundation for learning other courses.
Ability Enhancement Courses	Ability enhancement courses are the generic skill courses that enable students to develop a deeper sense of commitment to oneself and to the society and nation largely.

Skill Enhancement Courses	Skill Enhancement Courses enhance skills pertaining to a particular field of study to increase their employability/ Self- employment. These courses may be chosenfrom a pool of courses designed to provide value-based and/or skill-based knowledge.
Vocational Enhancement courses	Vocational Enhancement courses enhance skills pertaining to a particular field of study to increase their employability/ Self-employment.
Foundation/ Discipline based IntroductoryCourses	These courses will supplement in a better understanding of how to apply theknowledge gained in classrooms to societal issues.
Major Discipline CoreCourses	Major Discipline Core Courses aim to cover the basics that a student is expected to imbibe in that particular discipline. They provide fundamental knowledge and expertise to produce competent, creative graduates with a strong scientific, technical and academic acumen.
Major Discipline Elective Courses	These courses provide more depth within thediscipline itself or within a component of the discipline and provide advanced knowledge and expertise in an area of the discipline.
Allied Required	Allied required chosen from Economics discipline.
Project work/ Dissertation/ Internship/ Entrepreneur hip	Students shall carry out project work on his/her own with an advisory support by a faculty member to produce a dissertation/ project report. Internship/ Entrepreneurship shall be an integral part of the Curriculum.
Extension Activities	As part of the objective of Social Concern, the College has designed a well-structured Community Outreach programme of sixty

	hours called 'Bembala' (Support). The programme includes rural camps, workshops, lectures and seminars, teaching programmes in Government Schools or Colleges, community service in slums and villages, awareness programmes in streets, localities, slums or villages and public rallies on social issues. The College expects the students to be part of the activities organized by the College towards securing the goal of Social Concern. This programme is mandatory for the award of degree from the college.
Extra/Co Curricular Activities	The College has a wide range of student associations and clubs that provide space for students to develop their creative talents. The activities conducted help in developing not just artistic and entrepreneurial talents but also helps in character building, spiritual growth, physical growth, etc. They facilitate development of various domains of mind and personality such as intellectual, emotional, social, moral, and aesthetic developments. Creativity, enthusiasm, and positive thinking are some of the facets of personality development and the outcomes of these activities.

VI. CREDIT REQUIREMENT

Credits represent the weightage of a course and are a function of teaching, learning and evaluation strategies such as the number of contact hours, the course content, teaching methodology, learning expectations, maximum marks etc.

VII. TEACHING AND EVALUATION

M.A/M.Sc graduates from Economics, Mathematics and Data Analytics as master's degree from a recognized university are only eligible to teach and to evaluate the courses including part – B courses of I semester (except languages, compulsory additional courses and core Information Technology related courses) mentioned in this regulation. Languages and additional courses shall be taught by the graduates as recognized by the respective board of studies.

VIII. EXAMINATION & EVALUATION:

CONTINUOUS FORMATIVE EVALUATION/ INTERNAL ASSESSMENT:

Total marks for each course shall be based on continuous assessment and semester end examinations. As per the decision taken at the Karnataka State Higher Education Council, the total marks for CIA and ESE as per SEP for will be 40:60.

TOTAL MARKS FOR EACH COURSE	100%
Continuous Internal Assessment –CIA 1	20% marks
Continuous Internal Assessment –CIA 2	20% marks
End Semester Examination - (ESE)	60% marks

EVALUATION PROCESS OF INTERNAL ASSESSMENT MARKS SHALL BE AS FOLLOWS.

a. The first component (CIA 1) of assessment is for 20% marks. The second component (CIA 2) of assessment is for 20% marks.
b. During the end of the semester, end semester examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.
c. The students shall be informed about the modalities well in advance. The evaluated assignments during component I (CIA 1) and component II (CIA 2) are immediately provided to the students.
d. The marks of the total internal assessment shall be published on the ERP for students at the end of semester.
e. The internal assessment marks shall be submitted to the COE as per the date mentioned.
f. There shall be no minimum marks in respect of the internal assessment marks.
g. Internal assessment marks may be recorded separately. A student who has failed shall retain the internal assessment marks as there will be no change in the CIA results scored.

MINIMUM FOR A PASS

a) A student needs to get 40% in the end semester examination and in addition the student also should get an aggregate of overall 40% inclusive of his internal assessment to be declared as passed.
b) The student who has passed in all the end semester examinations in the first attempt is eligible for rank.
c) A student who passes the semester examinations in parts or attempted supplementary exams is eligible for only Class, CGPA but not for ranking.
d) The results of students who have passed the last semester examinations but not passed the lower semester examinations shall be eligible for the degree only after completion of all the lower semester examinations.
e) If a student fails in a subject, either in theory or practical, he/she shall appear for that subject only at any subsequent regular examination, as prescribed for completing the programme. He/she must obtain the minimum marks for a pass in that subject (theory and practical's separately) as stated above.

CARRY OVER

Students who fail in lower semester examinations may go to the higher semesters and take the lower semester examinations as per odd or even semester in the next consecutive chance.

CLASSIFICATION OF SUCCESSFUL CANDIDATES:

The ten-point grading system is adopted. The declaration of result is based on the Semester Grade Point Average (SGPA) earned towards the end of each semester or the Cumulative Grade Point Average (CGPA) earned towards the completion of all the six semesters of the programmes and the corresponding overall grades.

TRANSFER FOR ADMISSION:

Transfer for admission are permissible only for odd semesters for students of other universities and within the university.

CONDITIONS FOR TRANSFER OF ADMISSION OF STUDENTS WITHIN THE UNIVERSITY.

a) His/ her transfer admission shall be within the intake permitted to the college.
b) Availability of same combination of subjects studied in the previous college.
c) He/she shall fulfill the attendance requirements as per the University Regulation.
d) He/she shall complete the programme as per the regulation governing the maximum duration of completing the programme.

CONDITIONS FOR TRANSFER ADMISSION OF STUDENTS OF OTHER

UNIVERSITIES.

a) A Student migrating from any other University may be permitted to join odd semester of the degree programme provided he/she has passed all the subjects of previous semesters/years as the case may be. Such candidates must satisfy all other conditions of eligibility stipulated in the regulations of the University.
b) His/her transfer admission shall be within the intake permitted to the college.
c) He/she shall fulfill the attendance requirements as per the University Regulation.
d) The student who is migrating from other Universities is eligible for overall SGPA/CGPA or Class and not for ranking.
e) He/she shall complete the programme as per the regulation governing the maximum duration of completing the programme as per this regulation

SEP CREDIT MATRIX – Academic Year 2024-25

Structure	**Semester 1**	**Semester 2**	**Semester 3**	**Semester 4**	**Semester 5 (Deep Specialization)**	**Semester 6 (Deep Specialization)**
Paper 1	5	5	5	5	5	5
Paper 2	5	5	5	5	5	5
Paper 3	5	5	5	5	5	5
Language 1	3	3	3	3	-	-
Language 2	3	3	3	3	-	-
Elective	-	-			**2+1**	**2+1**
Compulsory Courses	2 (Psychological Wellbeing)	2(IC)	2(EVS)		2(SB)	2(Research Methodology)
Extension and Extra Curricular Activities	College Association Activities (ongoing)	1 College Association Activities	Department Association Activities (Ongoing)	1 Department Association Activities		
	Outreach Activities (ongoing)	1 Outreach Activities	Outreach Activities (Ongoing)	1 Outreach Activities		
Allied Required* (SWAYAM /NPTEL)	**3**	3		2	2	2
Internship			2 (Social, Startup, Hospitality/ Tourism) **Completed in Second Semester**		2 (Corporate) **Completed in Fourth Semester**	
Total	**26**	**28**	**25**	**25**	**24**	**22**

B. Sc. - Economics, Mathematics and Data Analytics Programme

PROGRAMM STRUCTURE
CORE SUBJECTS
SEMESTER – I

Course Code	Title of the Course	Category	Lecture Hours per week	Credits
S1 24 MC 101	Microeconomics	Major Core	5	5
S1 24 MC 102	Fundamentals of Applied Mathematics	Major Core	5	5
S1 24 MC 103	Descriptive Statistics and Excel	Major Core	5	5
S1 24 AR 101	Contemporary Indian Economy	Allied Required	3	3
C1 24 GE 101	Language 1	Compulsory course	3	3
C1 24 KN/HN/AE 102	Language 2	Compulsory course	3	3
UG 24 CC 101	Psychological wellbeing	Compulsory course	1	2
Total credits				**26**

SEMESTER – I

S1 24 MC 101: MICROECONOMICS

COURSE OBJECTIVES

The course is designed to acquaint the students with the basic concepts of microeconomics which form the base of modern economics. The course help the student understand the functioning of the economy at the individual level.

Module 1 – Introduction to Economics 10 hrs

Introduction to Economics: Nature and scope of economics, Basic Concepts in economics, Importance of study of Economics, Understanding the economy, Mankiw's ten principles of economics.

Module 2 – Approaches to Consumer Behaviour 15 hrs

Cardinal Analysis: Utility: Law of diminishing marginal utility, equi marginal utility, consumer's equilibrium, Consumer surplus and its – application. Ordinal analysis: Meaning of Indifference curves - Indifference Schedule, Indifference Map, properties of Indifference curves Budget line - Equilibrium position, Income, Price, and substitution effects through **Hicks and Slutsky's Method**-inferior goods v/s Giffen goods, Samuelson's revealed preference theory**, Choice under risk and uncertainty.**

Module 3 - Demand Analysis 10 hrs

Meaning and Determinants of Demand, the Demand Schedule, The Law of Demand, Exceptions to the Law of Demand, Elasticity of Demand: Meaning- Types: Price, Income and Cross Elasticity, Measurement of Elasticity of Demand. Supply: Concept of Supply, the Law of Supply, and Determinants of Supply.

Module 4 – Production Analysis 15 hrs

Production Function Production Function - The Law of Variable Proportion - the Law of Returns to Scale -**Isocost- Isoquant Approach**- Least cost combination of Inputs

Module 5 – Cost Analysis 5 hrs

Cost Concepts, Cost output relationship in the short - run and long - run – Relationship between Short run and long run curves, Relationship between Average Cost and Marginal Cost

Module 6 – Market Competition 20 hrs

Concepts of Revenue: Total, Average and Marginal Revenue Curve
- Price and Output determination under different markets: Meaning and features of perfect competitive market, Monopoly, Monopolistic competition and oligopoly, Price, and Output determination under these markets. **(in depth)**

SKILL DEVELOPMENT

(These activities are only indicative, and the faculty member can innovate)

1. Understand how economic concepts are applicable to everyday life by taking live examples.
2. Conduct a small survey to understand how consumer behaviour has evolved during the pandemic.
3. Choose a particular firm or industry and study the demand forecasting techniques.
4. Analyse different companies and identify which market competition they fall into.
5. Study the price fluctuations in the market due to changes in demand and supply.

COURSE OUTCOMES:

After the completion of the course, students will be able to:

1. Analyse the economic behaviour of the consumer and the firm
2. Explain the relationship between various variables such as Input and output, cost and output, price of the product and quantity demand and so on
3. Product and Factor pricing under different market structure

Books for Reference

1. Ahuja H.L, Advanced Economic Theory, S. Chand and Company, New Delhi
2. Koutsoyiannis A, Modern Microeconomics, Macmillan, London
3. Dominick Salvatore, Theory and Problems of Microeconomic Theory, Schaum's Outline Series, McGraw-Hill Book Company, Singapore
4. Ferguson C.E and Maurice S. Charles, Economic Analysis-Theory and Applications, Richard D. Irwin Inc. USA
5. Hubbard R. Glenn and Anthony Patrick O Brien, Microeconomics, Pearson Prentice Hall, New Jersey
6. Pindyck Robert S., and Daniel L. Rubinfeld, Microeconomics, Pearson Prentice Hall, New Jersey
7. Varian, H. R., "Intermediate Microeconomics: A Modern Approach", W. W. Norton and Company

S1 24 MC 102: FUNDAMENTALS OF APPLIED MATHEMATICS

COURSE OBJECTIVES:

This aims to provide students with a firm grasp of key matrix algebra, differential and integral calculus, and mathematical modelling. Through theoretical learning and practical applications, students will develop essential problem-solving skills relevant to mathematical analysis in addressing real-world problems.

Module – 1: Sets and functions 12 hrs

Definition of sets, set notation, types of sets, set operations (union, intersection, and difference), laws of set operations, Venn diagram and applications. Relations and Functions: ordered pairs, definition of a relation and examples, definition of a function, domain, codomain and range of a function, and types of functions (one to one, onto, many to one, and bijective) with examples. Algebraic functions -constant function, polynomial functions, rational functions and non - algebraic functions.

Module 2: Matrices, Determinants and Applications 15 Hrs.

Definition of matrix, order, Types of matrices, Determinant: Value of determinant of order 2x2 and 3x3, adjoint, row operations, inverse using formula method and row operations (2x2 and 3x3 matrices only). System of linear equations, augmented matrix, row operations, row echelon form, reduced row echelon form, existence and uniqueness of the solution, Gauss -Elimination method, Cramer's and matrix methods (2x2 and 3x3 matrices only).

Applications – Linear systems: Investment Problems, Traffic Flow, and Balancing the Chemical equations, and data encryption and decryption using a matrix and its inverse.

Module – 3: Differential Calculus 15 hrs

Functions, Limits and Continuity, Derivative of a function (concepts only), derivatives of the standard functions (excluding trigonometric functions), Rules of Differentiation: addition/subtraction, scalar multiplication, product, quotient, chain, Partial Derivatives, Maxima and Minima, and Lagrangian Multiplier-Constrained Optimization.

Applications: Cost minimization and Revenue and Profit maximization, Break Even Point, Marginal Cost, Marginal Revenue, and price elasticity of demand.

Module – 4: Integral Calculus 15 hrs

Introduction, Indefinite Integration, Standard Integrals (excluding trigonometric functions), Rules of Integration: addition/subtraction and scalar multiplication, Integration by Substitution, Integration by Parts, Integration by resolving into Partial Fractions.

Applications of Integration in business (finding cost, revenue functions from marginal cost and marginal revenue functions)

Module – 5: Differential Equations 8 Hrs

Definition of differential equation, first and second order linear homogenous ordinary differential equation with constant coefficients and its solution.

Module -6: Mathematical modelling using differential equations 10 hrs

Definition of Mathematical modelling, Applications: Radioactive Decay, Logistic growth (fishery, rabbits' population, piggery etc.), and Exponential Growth (continuous compounding of an invested amount)

SKILL DEVELOPMENT

1. Visualization of solution or roots of algebraic functions and discussion of nature of the roots
2. To solve and visual system of linear equations with 3 variables on GeoGebra website (Math visualizer platform)
3. Visualization of maxima and minima of single and multivariable functions(optimization) through function plotting software.
4. Visualization of the solution of the differential equations.

COURSE OUTCOMES:

After the completion of the course, students will be able to:

1. Understand the basic concepts of sets, relations, and functions.
2. Perform operations in matrix algebra and solve system of equations of real-world problems.
3. Differentiate and optimize the function of single and multiple independent variables.
4. Integrate functions with single independent variable.
5. Solve first and second order linear ordinary homogenous differential equations.
6. Model and solve differential equations governing real world problems.

Books for Reference

1. P. N. Arora & S. Arora: Mathematics
2. Lay, D. C., Lay, S. R., & McDonald, J. J, Linear algebra, and its applications
3. Pugh, C. C, Real mathematical analysis
4. Fitzpatrick, P. M., Advanced calculus
5. D.R. Agarwal: Comprehensive Mathematics
6. Anand Sharma: Business Mathematics & Analytics
7. Ajay Goel &Alka Goel: Mathematics & Statistics
8. Robert R. Stall: Linear Algebra & Matrix Theory

S1 24 MC 103: DESCRIPTIVE STATISTICS AND EXCEL

COURSE OBJECTIVES

This aims to provide students with a firm grasp of basic statistical concepts. Through theoretical learning and practical applications, students will develop an essential problem-solving skill relevant to statistics and real-world data analysis and interpretation, with a focus on applications in various fields and master excel functions for precise data manipulation. Develop proficiency in data visualization through charts and graphs for clear communication of insights. Gain expertise in dashboard development for representation of dynamic systems.

Module 1: Introduction to Statistics 15 Hrs.

Definition of Statistics, Scope and Limitations, Ethics to be followed by a statistician and role of statistics in sustainable development. Data- Meaning, Collection methods, and sampling techniques, Variables and Attributes - Discrete and Continuous Variables, Classification of data based on the nature of the variable and the source of collection, Formation of Statistical Series, Frequency Distribution (univariate and bivariate) and Tabulation. Diagrams and Graphs: Line, Bar diagrams and Pie chart, Ogives, Histogram, Frequency Curve and Polygon.

Module 2: Measures of Central Tendency and Dispersion 15 Hrs.

Meaning of Central Tendency, Arithmetic Mean (Simple, Weighted and Combined), Median, Mode, Empirical relationship, Quartiles, Deciles, Percentiles (applications, importance, merits, and demerits). Definition of Dispersion, Importance of Dispersion, Range, Quartile Deviation, Mean Deviation, Standard Deviation, and their coefficients, (applications, importance, merits, and demerits).

Module 3: Skewness and Kurtosis 10 Hrs.

Definition of Skewness, Measures of Skewness: Karl Pearson's and Bowley's Coefficient of Skewness, Moments (about mean and arbitrary point), Coefficient of Skewness based on Moments. Definition of Kurtosis, Measure of Kurtosis, and Coefficient of Kurtosis based on Moments.

Module 4: Correlation & Simple Linear Regression Analysis 15 Hrs

Correlation: definition, scatter diagram, levels of correlation, Karl Pearson's Coefficient of Correlation (Direct method only), probable error and confidence interval, and Spearman's Correlation Coefficient (unique and repeated ranks) and applications. Meaning of Linear regression, general expression ($y = \beta 0 + \beta 1 x + \epsilon$), types of simple linear regression equations, regression equation using method of least squares (direct method only), relationship between regression and correlation coefficients, and applications.

Module 5: Introduction to Excel 10 Hrs

Origin and Importance of Excel in Data Analysis, workbook, sheets: cells, columns, rows, ribbon and its components, table border and style, cell colour, text colour, range, formula bar and status bar, referencing: Relative, Absolute and Mixed, Mathematical operators and relations. Excel Functions - Mathematical Functions: SUM, AVERAGE, COUNT,

COUNTA, MIN/MAX, SQRT, POWER, LCM, COMBIN and PERMUT. String functions: LEN, LEFT, MID, RIGHT, CONCAT, TRIM, UPPER, LOWER, PROPER, Date Functions, Random number generators: RAND and RANDBETWEEN, Conditional functions: IF, NESTED IF, SUMIFS, COUNTIFS, and AVERAGEIFS, Data Handling Functions: VLOOKUP, HLOOKUP. Financial functions: PMT, PV, RATE, NPER.

Module 6 : Statistical Analysis using Excel 10 Hrs

Data Visualization: Bar charts, Column charts, Histogram, pie-chart, Line graphs, Sparklines, Scattered plot: linearity check and curve fitting, Chart elements and Chart designs. Interactive Dashboard Development: Pivot Table, Pivot Chart and Slicers. Measures of Central tendency: mean, median, mode, Dispersion: standard deviation, skewness and kurtosis, coefficient of correlation, simple linear regression, and estimation. What if Analysis: Goal Seek, Scenario manager, and Data table (one way and two way).

Skill Component:

Group Project: Utilizing Excel Tools for Analysis and Presentation of Insights.

The objective of this project is to employ the necessary Excel tools to analyse a given case study and extract valuable insights and presentation the same.

Course Outcomes:

After completion of the course, the students will be able to

1. Illustrate the significance of statistics in analysing business problems.
2. Use the concept of measures of central tendency and dispersion for decision making.
3. Apply the concept of Correlation and Regression to analyse the data.
4. Proficiently utilize Excel functions for precise data manipulation, enhancing analytical capabilities.
5. Demonstrate proficiency in data visualization through charts and graphs, and in statistical analysis, enabling clear communication of findings.

Books for Reference:

1. Gupta S.P., Statistical Methods, New Delhi, Sultan Chand & Sons.
2. J K Sharma – Business Statistics.
3. Akhilesh K. B. and Balasubrahmanyam S, Mathematics and statistics for Management, 1st Edition, Delhi, Vikas Publishing.
4. Winston, W. L., Microsoft Excel: Data Analysis & Business Model.
5. Lalwani, L., Excel All-In-One.
6. McFedries, P. Excel Formulas and Functions.
7. Alexander, M., & Walkenbach, J. Excel Dashboards and Reports.

UG 24 CC 101: PSYCHOLOGICAL WELL-BEING

COURSE OBJECTIVE

This course aims to nurture self-awareness and meaningful relationship skills and to help in the development of emotional quotient and inter-personal skills.

Module 1 – Introduction 3 Hrs.

Meaning of counselling – Myths and Facts related to counselling – Breaking stigmas related o seeking counselling – Normalizing seeking help – Self-reflection through concentric circles.

Module 2 – Intra-personal and Inter-personal Awareness 10 Hrs.

Meaning of self-esteem – Factors that influence self-esteem – Importance of self-esteem – Effects of low self-esteem – Qualities seen in people with high vs. low self-esteem – How to improve self-esteem – Self-awareness activity. Meaning of peer pressure – Different kinds of peer pressure – Resisting peer pressure – Confronting peer pressure – Group sharing activity. Meaning of relationships – Types of relationships – Healthy relationship dynamics – Personal Rights in a relationship – Components of a healthy relationship – Types of abuse in a relationship – Intimacy and understanding our needs – Boundaries

Module 3 – Understanding Emotions 4 Hrs.

Meaning of emotions – Role of emotions in our lives – Beliefs regarding emotions – Harmful effects of suppressing emotions – Signs of emotional suppression – Handling emotions in a healthy manner – Self-assessment activity

Module 4 – Anger management 5 Hrs.

Meaning of anger – Physical and Emotional symptoms of anger – Different ways that people express anger – Expression and experience of anger – What makes us angry and what it means when we're angry – Dealing with anger – Guided visualization and art activity.

Module 5 – Managing Anxiety/Fear 4 Hrs.

Meaning of fear – Types of fear – Physical and Emotional symptoms of fear – Different reactions to fear – Overcoming fear – Artwork followed by group sharing activity.

Module 6 – Dealing with Loss and Grief 4 Hrs.

Understanding loss and grief – Form of loss – Stages of grief – Dangers of not grieving – Dealing with grief – Ways to help others in grief.

COURSE OUTCOMES

After completion of the course, the students should be able to:

1. Develop a better emotional quotient.
2. Formulate a healthier sense of self through self-awareness.
3. Build more meaningful relationships.
4. Display an improvement in inter-personal skills.
5. Modify thought and belief patterns.

S1 24 AR 101: CONTEMPORARY INDIAN ECONOMY

Course objectives

- To familiarise students on the current problems of Indian Economy
- Identify solutions through specific policies.

Module 1: LPG Policies and Economic Reforms 5 hrs

f LPG-Economic reforms under the New economic policy – globalisation, privatisation, and liberalisation -Niti Aayog – functions and its role in India's economic development

Module 2 NITI AYOG and Economic Development 10 hrs

NITI Aayog and goals of SDG, programs of the govt- priorities of economic growth and employment, education, health and gender, environmental concerns, clean water, energy security, poverty alleviation and income inequality (overview of different programs). Population and demographic dividend. Human development Index, Hunger Index, Gross Happiness Index,

Module 3 Economic Reforms in Agriculture and Food management 10 hrs

Green revolution- Agricultural Finance-Agriculture price policy, minimum support price-procurement prices and issue price- zero hunger, public distribution system. MGNREGA-Agriculture and WTO (overview)

Module 4. Industry, innovation, infrastructure 10 Hours

New Industrial Policy 1991- public sector reforms, privatisation and disinvestment, entrepreneurship– competition policy. Role of MNCs in industrial development- economic and social infrastructure-roads, railways, airports tele density (overview).

Module 5. Monetary, Fiscal Policy and External Trade 10 Hours

Monetary Policy – RBI- Monetary policy -banking privatisation, role of SEBI. Fiscal Policy - Finance Commission and its role– Fiscal federalism. India's foreign trade- volume, direction, and composition (latest trends)- FDI –Meaning, trends and patterns- India's balance of payment since 1991.

Skill Development:

1. Using case study analyse the U N sustainable development goals.
2. Draft a diagrammatic representation of inflation rates for specific products using secondary data from websites
3. Using a chart to show impact of MNREGA works.
4. Using secondary data analyse India's direction of trade in the last 5 years.
5. Using secondary data analyse India's volume of trade in the last 5 years.

Course Outcomes

After completion of the course the students will be able to:

1. Understand the current problems of Indian Economy
2. Analyse the sector specific policies adopted for achieving the aspirational goals.
3. Review various economic policies adopted.
4. understand the history of Economic planning in India.
5. understand the sectoral reforms through LPG policy.

BOOKS FOR REFERENCE

1. Ramesh Singh. 2022 The Indian Economy, Tata McGraw Hill
2. Byres Terence J. (ed.), (1998), The State, Development Planning and Liberalisation 'in India, Delhi,
3. Dutt Ruddar and K.P.M Sundaram (2011): Indian Economy, S Chand& Co. Ltd. New Delhi
4. Frankel Francine R., (2004), India's Political Economy, Delhi.Jenkins Rob, 2000, Economic Reform in India, Cambridge,
5. Jalan, B. (1996), India’s Economic Policy- Preparing for the Twenty First Century, Viking, New Delhi.
6. Joshi Vijaya and L.M.D. Little, (1998), India's Economic Reform 1991-2001, Delhi,
7. Kapila Uma: Indian Economy: Policies and Performances, Academic Foundation
8. Mishra S.K & V.K Puri (2001) “Indian Economy and –Its development experience”, Himalaya Publishing House.
9. Mukharji Rahul (ed.) (2007), India’s Economic Transition: The Politics of Reforms, edited by Rahul Mukherji, Oxford University