Department of Higher Education
U.P. Government, Lucknow
National Education Policy-2020

Common Minimum Syllabus for all U.P. State Universities and Colleges

COURSE- BBA (MANAGEMENT SCIENCE)

Year	Sem.	Subject	Part	Paper Code	Paper Name	Credit	Theory/External	
							L	P
1	I	Course/ paper-1	A	F020101T	Intro to Computers	3	2	1
			B		IT Skills for Business	3	2	1
	I	Course/ paper-2	A	F020102T	Business Mathematics	3	2	1
			B		Operating System & Application Software	3	2	1
	I	Course/ paper-3	A	F020103T	Office management	3	2	1
			B		E-commerce	3	2	1
1	II	Course/ paper-4	A	F020201T	Operation Research	3	2	1
			B		Computer Network	3	2	1
	II	Course/ paper-5	A	F020202T	Database Management System	3	2	1
			B		Business Statistics	3	2	1
	II	Course/ paper-6	A	F020203T	Inroduction to Analytical Softwares	3	2	1
			B		Enterprise Resource Planning	3	2	1
2	III	Course/ paper-7	A	F020301T	Statistical Methods	3	2	1
			B		Management Information System	3	2	1
	III	Course/ paper-8	A	F020302T	Software Engineering	3	2	1
			B		Project Management	3	2	1
	III	Course/ paper-9	A	F020303T	Market Data Analysis	3	2	1
			B		Business Law	3	2	1
2	IV	Course/ paper-10	A	F020401T	Information Security and Cyber Law	3	2	1
			B		Big Data analytics and Data Warehouse	3	2	1
	IV	Course/ paper-11	A	F020402T	Cloud Computing for Business	3	2	1
			B		Decision Support System	3	2	1
	IV	Course/ paper-12	A	F020403T	Financial Mathematics	3	2	1
			B		Production and Operations Management	3	2	1
3	V	Course/ paper-13	A	F020501T	Logistics and Supply Chain Management	3	2	1
			B		Mathematical Modeling	3	2	1
	V	Course/ paper-14	A	F020502T	Data science and Machine Learning	3	2	1
			B		Internet of Things	3	2	1
	V	Course/ paper-15	A	F020503T	Investment Analysis and Portfolio Management	3	2	1
			B		Financial Inclusion	3	2	1
3	VI	Course/ paper-16	A	F020601T	Strategic Management	3	2	1
			B		Data Mining & Business Intelligence	3	2	1
	VI	Course/ paper-17	A	F020602T	Artificial Intelligence in business	3	3	0
			B		Business Ethics & Governance	3	3	0
	VI	Course/ paper-18	A	F020603T	Advanced Data Base Management System	3	2	1
			B		Global Financial Analysis	3	2	1

- *Note: the teaching and internal evaluation may be performed by two teachers but external examination will be one. The external examination of three hours can be taken on two separate answer books and evaluated by two examiners*
- Course/ paper No-*3,6,9 and 12 of Semester-I,II,III and IV can be opt from any faculty. Not mandatory to opt from own faculty*

• **Name**	**Designation**	**Affiliation**
Steering Committee		
Mrs. Monika S. Garg, (I.A.S.), Chairperson Steering Committee	Additional Chief Secretary	Dept. of Higher Education U.P., Lucknow
Prof. Poonam Tandan	Professor, Dept. of Physics	Lucknow University, U.P.
Prof. Hare Krishna	Professor, Dept. of Statistics	CCS University Meerut, U.P.
Dr. Dinesh C. Sharma	Associate Professor	K.M. Govt. Girls P.G. College Badalpur, G.B. Nagar, U.P.
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Prof. Sudhanshu Pandiya	Professor	C.S.J.M. University, Kanpur
Prof. Nishant Kumar	Asso. Professor	Lucknow University, Lucknow

Syllabus Propelled by:

S. No.	Name	Designation	Department	College/ University
1	**DR. MUKESH SRIVASTAVA**	**Assistant Professor**	INSTITUTE OF MANAGEMENT SCIENCES	UNIVERSITY OF LUCKNOW, LUCKNOW
2	**DR. SANJAY SINGH**	**Assistant Professor**	INSTITUTE OF BUSINESS STUDIES	CCS UNIVERSITY, MEERUT

PROGRAM OBJECTIVE

The course aims to provide the knowledge and skill-sets for making the students ready for employment in Technology Driven field. The essential tools and techniques required by the industries will also be inculcated through the curriculum. The course provides in-depth understanding of strong conceptual framework Information Technology. The students shall also be able to understand applicability of the theoretical concepts into real business issues. The course also focuses on how to operate management tools in a scientific arrangement which can use quantitative methods and IT tools in combination. The students shall also be able to understand applicability of the Technology into real business issues, research and innovation purposes.

PROGRAMME OUTCOMES

At the end of this course, students should be able to:

- Demonstrate their understanding of descriptive statistics by practical application of quantitative reasoning and data visualization
- Demonstrate their knowledge of the basics of inferential statistics by making valid generalizations from sample data in terms of skills
- Use Analytical software to conduct statistical analysis for resolving business problems
- Recognize pitfalls in using statistical methodology and enable himself for usage of upgraded and innovative methods to deal in practical situations.
- Students will develop Critical attitudes, which are necessary for “life-long learning” in this course and Greater appreciation for the importance of statistical literacy in today’s data rich world

Certificate

BBA (Management Science)

Year 1 (Semester 1+2)

SEMESTER I

Year	Sem.	Subject	Part	Paper Code	Paper Name	Credit	Theory/External	
							L	P
1	I	Course/ paper-1	A	F020101T	Intro to Computers	3	2	1
			B		IT Skills for Business	3	2	1
	I	Course/ paper-2	A	F020102T	Business Mathematics	3	2	1
			B		Operating System & Application Software	3	2	1
	I	Course/ paper-3	A	F020103T	Office management	3	2	1
			B		E-commerce	3	2	1

Note: the teaching and internal evaluation may be performed by two teachers but external examination will be one. The external examination of three hours can be taken on two separate answer books and evaluated by two examiners

Programme/Class: Certificate BBA (MS)	Year: First	Semester: First

Course/ paper-1 (A)

Course Code: F020101T	Course Title: Introduction to Computers

Course outcome: The course aims at providing basic knowledge of computer to the students and its usage in businesses.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:30

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	**Fundamentals of Computers:** Introduction to computer types (Analog, Digital and Hybrid); Characteristics of computers; Evolution of computers (History, generation), Basic components of a computer, their functions and interrelation; stores program concepts, RAM, ROM; Computer hardware and software and firmware; Computer languages, types of software, processing of a computer program, batch, time-sharing and multi programming; Computer uses, applications and capabilities; concept of data communication and networking. Types of Computer Systems; Personal, Micro, Mini, mainframe and super computer; differences and capabilities; range of applications.	8+4
II	**Data Representation:** Binary, Octal and Hexadecimal Number Systems and their inter-conversions; Binary Arithmetic; Internal data representation; Organization of memories; Fixed point and Floating-point number representation; representation of Alphanumeric character codes, ASCII codes. Introduction, types and applications of Text Processor, Word Processor, Spread Sheet.	7+4
III	**Data Storage:** Primary storage; addressing and capacity; types of secondary storage – magnetic tapes, disks, organization methods (sequential and direct); floppy disk optical disk; CD-ROM. Input/Output Devices: Tape/Disks/diskettes, Light-pen, mouse and joysticks, character readers, VDU, serial, line-printer plotters.	7+4
IV	**Operating System:** Introduction to operating system; types of operating systems with main emphasis on Disk Operating System (DOS); Details of basic system configuration; Important terms like Director, File, Volume, Label, Drive name etc.	7+4

Suggested Readings:

1. Govindraju, S., " Introduction to Computer Science ", New Age International Publisher , India, 1996.
2. Jain VK, "Computers for Beginners", Pustak Mahal, New Delhi, 2006.
3. Sinha PK, Sinha P., "Computer Fundamentals: Concepts, Systems & Applications", BPB Publications, 2004.
4. Suggestive digital platforms web links- https://homepage.cs.uri.edu/faculty/wolfe/book/Readings/Reading01.htm

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

Suggested equivalent online courses:

Further Suggestions:

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Programme/Class: Certificate BBA (MS)	Year: First	Semester: First

Course/ paper-1 (B)

Course Code: F020101T	Course Title: IT Skills for Business

Course outcomes: Students acquire skills of using end-user software for communication, data transformation, collaboration, and problem-solving. They also acquire understanding of software and hardware components, information structures, basic business processes, information system security, and networks.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	**Text processing software:** creating and saving a document, previewing and printing a document, editing, proofreading and formatting of documents. Presenting information in columns and tables, using graphics, symbols, diagrams and charts. Creating and modifying table of contents, index, bookmarks, cross references, hyperlinks, foot notes, end notes and bibliography. Crating form letters, e-mail messages and labels. Collaborating using tracking of changes, adding and reviewing comments, comparing and merging documents, password protecting of documents. Creating documents in alternate formats.	8+4
II	**Presentation software:** Creating and managing slides and presentation, entering and editing content on slides, presenting content in tables, inserting, creating and managing graphics, adding sound and animation to slides, reviewing, preparing and delivering presentation, customising and sharing presentations.	7+4
III	**Spreadsheet Software:** Creating workbooks, working with data and tables, formatting and changing workbook appearance, managing and hiding worksheet data, ordering and summarising data, combining data from multiple sources, creating charts and graphs,	7+4
IV	**Performing calculations using Formulas and Functions:** analysing alternate data sets, creating dynamic worksheets, printing worksheets and charts. Automating repetitive tasks, using workbooks for collaborative working. Performing business intelligence analysis.	7+4

Suggested Readings:

1. Norton P., Introduction to computers, 9th reprint Edi., Tata Mcgraw Hill, 2008
2. Saxena S.& Chopra P, Computer Application in Management, Vikas Publication,2006.
3. Gupta Vikas, 14 in one computer course kit, Dreamtech Publication, 2008
4. Suggestive digital platforms web links-

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

Suggested equivalent online courses:

Further Suggestions:

Programme/Class: Certificate BBA (MS)	Year: First	Semester: First

Course/ paper-2 (A)

Course Code: F020102T	Course Title: Business Mathematics

Course outcome: The Course aims at providing students insight about the mathematical terms and their appropriate usage in business problems.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	**Set Theory, Series and Permutation Combination:** Summation of sets, Arithmetical Progression- Sum of a series in A. P. Arithmetic Mean, Geometric Progression, Sum of a series in G.P, Geometrical Mean, Sum of an infinite geometric series, Permutation and combination, Fundamental rules of counting, Permutation of n different things, Permutation of thing not all different., Circular permutation, Combination of n different things r at a time, Simple problems.	8+4
II	**Matrix Algebra:** Definition, Matrix Operations- Addition, Subtraction, and Multiplication of matrices, Types of matrices- Square, Diagonal, null, Transpose of a matrix, Determinant of a Square matrix. Singular and non-singular matrix, Co- factor matrix, ad-joint of a matrix , Inverse of a matrix. Solution of simultaneous equation by using matrices.	7+4
III	**Differential & Integral Calculus :** Differentiation, Differentiation of a product of two function, Differentiation of a quotient of two functions, Differentiation of a function of a function, Differentiation of a logarithmic and exponential function, Differentiation of implicit function, Maxima and Minima, Simple problems. (Trigonometrical function are excluded), Fundamental rules of integration, Integration by substitution, integration by parts. Integration by decomposition into a sum using partial fractions (Simple Problems), Simple business applications (Trigonometrical functions are excluded)	10+4
IV	**Business applications:** Derivative as a rate measure, elasticity of a function. Price elasticity of demand, price elasticity of supply. Marginal cost and marginal revenue.	4+4

Suggested Readings:

1. Sancheti & Kapoor, Business Mathematics ,Sultan Chand & Sons, Reprint Edi, 2008
2. Raghavachari M., Mathematics for Management: A Introduction, Tata McGraw-Hill Education, 1980.
3. Qazi Zameeruddin, Vijay K Khanna & S K Bhambri , Business Mathematics , Vikas Publication, 2009
4. Suggestive digital platforms web links-

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

Suggested equivalent online courses:

Further Suggestions:

Programme/Class: Certificate BBA (MS)	Year: First	Semester: First

Course/ paper-2 (B)

Course Code: F020102T	Course Title: **Operating System & Application Software**

Course outcome: This paper would make students learn about the latest version MS Windows operating system. The application software covered under this paper would include MS Office.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	**Inroduction to DOS (Disk Operating System):** DOS Components – I/O Systems, BIOS, COM, IBM, DOS-COM, start-up sequence, file name, hard disk; Use of function keys; File commands; Dir, Copy, Delete, Rename, Type-Print Etc. Disk Commands – Format, Diskcopy Backup, Restore, Chkdsk, Batch Files, Editor; Creating and editing files, commands and special editing keys, Setting up MS-DOS; System and autoexec.bat files; use of wild cards, redirecting commands; input/output fitters, pipes.	8+4
II	**Operating System-Windows** Concepts of CUI & GUI, MS-Windows as GUI operating system, parts of windows, capabilities – interface, menu driven, ready internet connectivity, easy navigation, simple keep up and management of files, inbuilt product – notepad, paint brush word pad, windows explorer.	7+4
III	**Tools of Office Support-** Introduction to word processing software, Introduction to Presentation software, Introduction to Databases and DBMS Concept, Database Models. Working on MS Access: Creation of Table, Query etc.	7+4
IV	**Tools of Business Support:** Introduction to MS excel, Worksheet Addressing, Name Range, Basic formula and function, Table and Chart, Sort and Filters, Conditional formatting, nested conditions, Marco, OLE Concept. Some advance tools like-Data Validation, what if analysis, sensitivity analysis; goal seek analysis, Pivot Table, Optimization analysis, Lookup function, Security and protection of worksheet etc.	7+4

Suggested Readings:

1. Rajaraman, V. (2004). Introduction to Information Technology. PHI.
2. Sinha, P.K., Priti Sinha (2002). Foundation of computing. BPB Publications.
3. Ram, B. (2003). Computer Fundamentals. New Age Publications
4. Suggestive digital platforms web links-

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

Suggested equivalent online courses:

Further Suggestions:

Programme/Class: Certificate BBA (MS)	Year: First	Semester: First

Course/ paper-3 (A)

Course Code: F020103T	Course Title: Office management

Course outcomes: To familiarize students with the activities in a modern office. Smooth functioning of any organization depends upon the way various activities are organized, the facilities provided to the staff working in the office, the working environment, tools and equipments used in office.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	**Office and office Management:** meaning of office, function of office, primary and administrative functions, importance of office. Relation of office with other departments of business Organization. Concept of paperless office, virtual office, back and front office, open and private office. Definition and elements of office management, duties of an Office Manager.	8+4
II	**Filing and Indexing:** Meaning and importance of filing, essential of good filing system. Centralized and decentralized filing system. Meaning, need and types of indexing used in the business organization. Office forms– Meaning and types of forms used in business organization, advantages, forms controls, objectives, form designing, principles of forms designing and specimens of forms used in office. Office Record Management – Meaning, importance of record keeping management, principles of record management and types of records kept in a business organization.	7+4
III	**Office Machines and equipments:** Importance, objectives of office machines. Office Safety and Security – Meaning, importance of office Safety, safety hazards and steps to improve office safety. Security hazards and steps to improve office security.	7+4
IV	**Measurement of Office Work:** Importance, purpose, difficulty in measuring office work. Different ways of measurement, setting of work standards, benefits of work standards. Techniques of setting standards. Office Manuals – Meaning, need, types of office manuals and steps in preparing of office manuals.	7+4

Suggested Readings:

1. Duggal, Balraj, Office Management and Commercial Correspondence, Kitab Mahal, New Delhi, 1998.

2. P.K. Ghosh, "Office Management", Sultan Chand & Sons. New Delhi, 2010.

3. R.K. Chopra, Office Management, Himalaya Publishing House, Tenth Edi, 2015.

4. Suggestive digital platforms web links-

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

Suggested equivalent online courses:

Further Suggestions:

Programme/Class: Certificate BBA (MS)	Year: First	Semester: First

Course/ paper-3 (B)

Course Code: F020103T	Course Title: E-commerce

Course outcomes: This paper would provide adequate exposure to the students with practice and usage of internet as well as make them learn various tools and techniques of E-Commerce.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	**E-Commerce concept:** Meaning, definition, concept, features, function of E-Commerce, E-Commerce practice v/s traditional practices, scope and basic models of E-Commerce, limitations or E-Commerce, precaution for secure E-Commerce, proxy services.	8+4
II	**Electronic Data Interchange:** Concept of EDI, difference between paper-based business and EDI based business, advantages of EDI, application areas for EDI, action plan for implementing EDI factors influencing the choice of EDI, software concept of electronic signature, access control.	7+4
III	**Types of E-Commerce:** Meaning of B2C, B2B, C2C and P2P. Applications in B2C, E-Banking, E-Trading, E-Auction – Introduction and overview of these concepts. Application of B2B, E-distributor, R2B service provider, benefits of B2B on procurement, just in time delivery. Consumer to consumer and peer to peer business model introduction and basic concepts.	10+4
IV	**Understanding of Key terms of E- Commerce:** Electronic Commerce & Banking, Electronic Payment Systems, Electronic Payment Technology, On-line credit card, E- Commerce Security.	4+4

Suggested Readings:

1. K. Bajaj & D. Nag, E-Commerce: The cutting edge of business, Tata McGraw-Hill Education, 2000.
2. Goel R., E-Commerce, New Age International, 2007.
3. Bharat Bhaskar, Electronic Commerce: Framework - Technologies and Applications, Tata McGraw Hill Education; 3rd edition, 2008.
4. Suggestive digital platforms web links-

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

Suggested equivalent online courses:

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Further Suggestions:

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SEMESTER II

Year	Sem.	Subject	Part	Paper Code	Paper Name	Credit	Theory/External	
							L	P
1	II	Course/ paper-4	A	F020201T	Operation Research	3	2	1
			B		Computer Network	3	2	1
	II	Course/ paper-5	A	F020202T	Database Management System	3	2	1
			B		Business Statistics	3	2	1
	II	Course/ paper-6	A	F020203T	Inroduction to Analytical Softwares	3	2	1
			B		Enterprise Resource Planning	3	2	1

Note: the teaching and internal evaluation may be performed by two teachers but external examination will be one. The external examination of three hours can be taken on two separate answer books and evaluated by two examiners

Programme/Class: Certificate BBA (MS)	Year: First	Semester: SECOND

Course/ paper-4 (A)

Course Code: F020201T	Course Title: **OPERATION RESEARCH**

Course outcomes: The basic objectives of this course is to impart knowledge of different quantitative methods & operations research techniques used in business decisions and management.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	Nature, Definition & characteristics of operations research, Methodology of OR, Models in OR: OR & managerial Decision making, OR techniques	8+4
II	Linear programming : Inroduction, Advantages of Linear Programming, Applications areas of Linear Programming. LPP - problem formulation, Graphic Method, Simplex Method (including Big M method	7+4
III	Transportation - North West Corner Rule, Method of matrix Minima & VAM Methods, Degeneracy Problems, MODI Method. Assignment Problems.	7+4
IV	Job Sequence Analysis PERT & CPM- Introduction, Network Analysis, Time Estimates in Network Analysis, Critical Path Method; Programme Evaluation & Review Technique	7+4

Suggested Readings:

1. Operation Research; V.K. Kapoor
2. Operation Research; S.D. Sharma
3. Operation Research - An Introduction; Hamdy A. Taha
4. Operation Research; K.G. Gupta

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ
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Suggested equivalent online courses:
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Further Suggestions:
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Programme/Class: Certificate BBA (MS)	Year: First	Semester: Second

Course/ paper-4 (B)

Course Code: F020201T	Course Title: **COMPUTER NETWORKS**

Course outcomes: The Paper aims at enable students to understand the networking and applications of the computer which make them better computer-savvy.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	**Introduction** Network applications, network hardware, network software, reference models : OSI, TCP/IP, Internet, Connection oriented network - X.25, frame relay. THE PHYSICAL LAYER : Theoretical basis for communication, guided transmission media, wireless transmission, the public switched telephone networks, mobile telephone system.	8+4
II	**The Data Link Layer** Design issues, error detection and correction, elementary data link protocols, sliding window protocols, example data link protocols - HDLC, the data link layer in the internet. The Medium Acess Sublayer : Channel allocations problem, multiple access protocols, Ethernet, Data Link Layer switching, Wireless LAN, Broadband Wireless, Bluetooth.	7+4
III	**the Network Layer** Network layer design issues, routing algorithms, Congestion control algorithms, Internet working, the network layer in the internet (IPv4 and IPv6), Quality of Service.	7+4
IV	**IV The Transport Layer :** Transport service, elements of transport protocol, Simple Transport Protocol, Internet transport layer protocols : UDP and TCP. **The Application Layer :** Domain name system, electronic mail, World Wide Web : architectural overview, dynamic web document and http. Application Layer Protocols : Simple Network Management Protocol, File Transfer Protocol, Simple Mail Transfer Protocol, Telnet.	7+4

Suggested Readings

Text Books

1. A.S. Tanenbaum (2003), Computer Networks, 4th edition, Pearson Education / PHI, New Delhi, India.

References Books :

1. Behrouz A. Forouzan (2006), Data communication and Networking, 4th Edition, Mc Graw-Hill, India.
2. Kurose, Ross (2010), Computer Networking : A top down approach, Pearson Education, India.

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

Suggested equivalent online courses:

Further Suggestions:

Programme/Class: Certificate BBA (MS)	Year: First	Semester: second

Course/ paper-5 (A)

Course Code: F020202T	Course Title: **DATA BASE MANAGEMENT SYSTEMS**

Course outcomes: The Paper helps students to understand databases and the relational databases which helps them in decision making and solving business problems.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	**Introduction to Databases and Transactions** What is database system, purpose of database system, view of data, relational databases, database architecture, transaction management **Data Models** The importance of data models, Basic building blocks, Business rules, The evolution of data models, Degrees of data abstraction	8+4
II	**Database Design, ER - Diagram and Unified Modeling Language** Database design and ER Model : overview, ER - Model, Constraints, ER - Diagrams, ERD Issues, weak entity sets, Codd's rules, Relational Schemas, Introduction to UML. Relational database model : Logical view of data, keys, integrity rules. Relational Database design : features of good relational database design, atomic domain and Normalization (1NF, 2NF, 3NF, BCNF).	7+4
III	**Relational Algebra and Calculus** Relational algebra: introduction, Selection and projection, set operations, renaming, Joins, Division, syntax, semantics. Operators, grouping and ungrouping, relational comparison. Calculus : Tuple relational calculus, Domain relational Calculus, calculus vs algebra, computational capabilities.	7+4
IV	**Constraints, Views and SQL** What is constraints, type f constrains, integrity constraints, Views : Introduction to views, data independence, security, updates on views, comparison between tables and views. SQL : data definition, aggregate function, Null Values, nested sub queries, joined relations. Triggers	7+4

Suggested Readings:

Books : A Silberschatz, H Korth, S Sudarhan, *"Database System and Concepts", fifth* Edition McGraw - Hill, Rob, Coronel, *"Database Systems", Seventh Edition*, Cengage Learning.

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

Suggested equivalent online courses:

Further Suggestions:

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Programme/Class: Certificate BBA (MS)	Year: First	Semester: Second

Course/ paper-5 (B)

Course Code: F020202T	Course Title: **BUSINESS STATISTICS**

Course outcomes: The course aims to build skills for statistical inference of business data.

Credits: 2	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-0

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	Statistics : Types of Data, Classification & Tabulation of Data, Frequency Distribution, Census and Sample Investigation, Diagrammatical and Graphical Presentation of Data.	8+4
II	Measures of central Tendency (Mean, Median & Mode) measures of Dispersion (Range, Mean Deviation & Standard Deiation).	7+4
III	Correlation : Significance of Correlation, Types of Correlation, Scatter Diagram Method, Karl Pearsn Coefficient of correlation, Spearman's coefficient of Rank correlation. Regression : Introduction, Regression Lines and Regression Equations & Regrassion Coefficients	7+4
IV	Analysis of Time Series, Index numbers, Interpolation and Extrapolation.	7+4

Suggested Readings:

1. Raghavachari; Mathematics for Management
2. Zamiruddin; Business Mathematics
3. Gupta S.P. & Gupta M.P.; Business Statistics
4. Elhance, D.N. ; fundamentals of Statistics
5. Gupta C.B; introduction of statistical Methods
6. K.G. Gupta; Quantitative Techniques

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

Suggested equivalent online courses:

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Further Suggestions:

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Programme/Class: Certificate BBA (MS)	Year: Third	Semester: VI

Course/ paper-6 (A)

Course Code: F020203T	Course Title: Inroduction to Analytical Softwares

Course outcomes: Statistics 3304 focuses on using statistical software to perform basic statistical analysis. In particular, we will use Excel, R, and SPSS to perform the same sorts of statistical analyses that you would have seen in an introductory statistics course.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	**Overview of Business Analytics:** Introduction to Analytics, Organization/sources of data, Importance of data quality, Dealing with missing or incomplete data, Data Classification	8+4
II	**Introduction to MS-Excel Application :** Introduction to Microsoft Excel, Worksheets and Workbooks, Formatting Cells and Data, Editing Worksheets and Cells, Introduction to Formulas, Creating a What-If Analysis, Adding Images and Graphics, Charts and Diagrams, Creating Data Lists, Pivot Tables and Charts, Templates and Macros, Retrieving External Data, Sorting and Filtering, Common Useful Functions, Introduction to VBA	7+4
III	**Getting started with SPSS:** Tour of SPSS windows, menus, and dialogue boxes, Open, save, and close SPSS data and output files, Prepare a data entry codebook, Create a SPSS data file, Enter data into an SPSS data file, Check a data file for errors, Correct errors in the data file, Obtain descriptive statistics, Create a variety of graphs (histograms, bar graphs), Manipulating the data to form, new variables (computing totals, collapsing categories), Sorting the data file	7+4
IV	**Introduction to R- Packages-** Scientific Calculator- Inspecting Variables- Vectors Matrices and Arrays- Lists and Data Frames- Functions- Strings and Factors- Flow, Control and Loops- Advanced Looping- Date and Times. Introduction to Python Packages- Fundamentals of Python- Inserting and Exporting Data- Data Cleansing, Checking and Filling Missing Data- Merging Data- Operations- Joins.	7+4

Suggested Readings:

1. Gupta Vikas,(2008) 14 in one computer course kit, Dreamtech Publication
2. Andy Field: Discovering Statistics using SPSS, Sage Publications, 4e, 2019
3. Dalgaard, Peter, "Introductory statistics with R", Springer Science & Business Media, 2008.
4. Richard Cotton, "Learning R", O'Reilly, 2013

Suggestive digital platforms web links-

1. An Introduction to R: http://cran.r-project.org/doc/manuals/R-intro.pdf
2. SPSS Beginners Tutorials (https://www.spss-tutorials.com/basics/#introduction-to-spss)

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

Suggested equivalent online courses:

Further Suggestions:

Programme/Class: Certificate BBA (MS)	Year: First	Semester: Second

Course/ paper-6 (B)

Course Code: F020203T	Course Title: **ENTERPRISE RESOURCE PLANNING**

Course outcomes: To understand Enterprise- wide systems and technologies relevant to business and develop resource plans for the enterprise accordingly.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	**Introduction to Enterprise Resource Planning** Introduction of the term Business Process Reengineering (BPR), BPR Methodology, Current BPR tools, Introduction to material requirement planning (MRP), Definition of Enterprise Resource Planning (ERP); Evolution of ERP; Characteristics, Features, Components and needs of ERP; ERP Vendors; Benefits & Limitations of ERP Packages	8+4
II	**Enterprise Modeling and Integration of ERP** Need to focus on Enterprise Integration / ERP; Information mapping; Role of common shared Enterprise database; System Integration, Logical vs. Physical System Integration, Benefits & Limitations of System integration, ERP's Role in Logical and Physical Integration.	7+4
III	**ERP Architecture and Implementation Methodology of ERP** Generic Model of ERP system; Core Modules functionality; Types of ERP architecture, Client Server Architecture, Web - based Architecture, Service Oriented Architecture (SOA) ; Difficulty in selecting ERP, Approach to ERP selection, Request for proposal approach, proof - of - Concept approach; General Implementation Methodology of ERP, Vanilla Implementation; Evaluation Criteria of ERP Packages; Project Implementation Team Structure	7+4
IV	**IV Introduction to SAP, oracle APPS** SAP, Integrated SAP Model, SAP Architecture, SAP R/3 System & my SAP, SAP Modules; Oracle Apps, Oracle AIM Methodology, Oracle Fusion Modules; A Comparative assessment of ERP Packages	7+4

Suggested Readings:

1. ERP: Making It Happen: The Implementers' Guide to Success with Enterprise Resource Planning by Thomas F. Wallace
2. Directing the ERP Implementation: A Best Practice Guide to Avoiding Program Failure Traps While… by Michael W. Pelphrey

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

Suggested equivalent online courses:

Further Suggestions:

Diploma in
BBA (Management Science)
Year 2 (Semester 3 + 4)

SEMESTER III

Year	Sem.	Subject	Part	Paper Code	Paper Name	Credit	Theory/External	
							L	P
			B		Enterprise Resource Planning	3	2	1
2	III	Course/ paper-7	A	F020301T	Statistical Methods	3	2	1
			B		Management Information System	3	2	1
	III	Course/ paper-8	A	F020302T	Software Engineering	3	2	1
			B		Project Management	3	2	1
	III	Course/ paper-9	A	F020303T	Market Data Analysis	3	2	1
			B		Business Law	3	2	1

Note: the teaching and internal evaluation may be performed by two teachers but external examination will be one. The external examination of three hours can be taken on two separate answer books and evaluated by two examiners

Programme/Class: Diploma BBA (MS)	Year: Second	Semester: Third

Course/ paper-7 (A)

Course Code: F020301T	Course Title: Statistical Methods

Course outcomes: The course aims to equip the students with statistical concepts, methods and tools that help in decision making in different spheres. The emphasis is on their applications in business.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	**Measures of Central Tendency and Dispersion:** Definition, scope, importance and limitations of statistics, methods of collection and tabulation of data. Measures of Central Tendency – Mean, median, mode, goemetric and harmonic mean. Measure of Dispersion – Range, quartile, deviation, mean deviation and standard deviation. Skewness, moments and kurtosis. Simple correlation and regression, partial and multiple correlation and regression.	8+4
II	**Probability** – Definition - objective and subjective, addition and mulitplication theorem of probability, conditional probability, Baye's theorem, probability distribution, binominal, poisson and normal.	7+4
III	**Sampling and sampling distribution:** methods of sampling, sampling and non-sampling errors, central limit theorem, sampling distribution of the mean, distribution of difference of two means, sampling distribution of the difference of two proportions.	7+4
IV	**Tests of Hypothesis**: Hypothesis Testing Concept, Type I and Type II Errors, one tailed and two tailed tests, testing hypothesis about population mean, testing hypothesis about the difference between the means, testing hypothesis about population, proportion and the difference of two proportions. Small sampling theory – Student's T test distribution – Chi (ki) square test.	7+4

Suggested Readings:

1. Levin &Rubins, Statistics for Business, Prentice Hall of India, 8th Edition, N.Delhi, 2017.
2. Medhi,J, Statistical Methods-An Introductory Text,New Age International Publishers, ISBN: 978-81-224-1957-3, 2013.
3. Arulmozhi ,G. and Muthulakshmi ,S. , Statistics for Management, The McGraw-Hill Education, ISBN: 9780070153684, 2009.

Suggestive digital platforms web links-

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

Suggested equivalent online courses:

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Further Suggestions:

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Programme/Class: Diploma BBA (MS)	Year: Second	Semester: Third

Course/ paper-7 (B)

Course Code: F020301T	Course Title: Management Information System

Course outcomes: Students will be able to understand and articulate fundamental concepts of information systems management. Apply IT to solve common business problems. Plan and implement effective IT solutions to business problems. Apply the ethical aspects of information technology use in the organization.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	**Information Systems:** Concept & Technologies, Role of information Systems in Business. Influence of Information Systems in Transforming Businesses. Global E Businesses and Collaborations, Strategic roles of Information Systems. Behavioural, Technical and Socio-technical approaches. Enhancing Business Processes through Information Systems. Types of Business Information Systems. TPS, MIS, DSS and EIS. Organising the Information Systems function in Business. Ethical and Social issues of Information Systems.	8+4
II	**Using Information Systems to Achieve Competitive Advantage:** Porter's Competitive Forces Model and The Business Value Chain Model. Aligning Information Systems with Business. Decision Making and Information Systems: Types of Decisions and the Decision-Making Process, Business Value of Improved Decision Making. Decision Support for Operational, Middle and Senior Management. Concepts of Database and Database Management System.	7+4
III	**Functional Information Systems:** Marketing, Human Resource, Financial and Operational Information Systems. Cross Functional Information Systems, Enterprise Systems. Supply Chain Management Systems. Customer Relationship Management Systems. Business Value of Enterprise applications and challenges in Implementing.	7+4
IV	**Implementing Information Systems as Planned Organisational Change:** Business Process Reengineering. Systems Analysis and Systems Design. Modeling and Designing Systems: Structured and Object-Oriented Methodologies, Traditional Systems Life Cycle, Prototyping, End-User Development, Application Software Packages and Outsourcing. Implementing Information Systems. Introduction to Change Management.	7+4

Suggested Readings:

1. Laudon Kenneth C. and Laudon Jane P, Management Information Systems Managing the Digital Firm by : Pearson Publication, 15e , 2018
2. Jawadekar Waman S., Management Information Systems A Global Digital Enterprise Perspective; McGraw Hill, 2013.
3. Dr.S.Shajahan, R.Priyadharshini, Management Information Systems, New Age International Publishers, 2004.

Suggestive digital platforms web links-

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

Suggested equivalent online courses:

Further Suggestions:

Programme/Class: Diploma BBA (MS)	Year: Second	Semester: Third

Course/ paper-8 (A)

Course Code: F020302T	Course Title: Software Engineering

Course outcomes: The course is aimed at enhancing skills that will enable the student to develop business software's that are simple reliable and capable of modification as per requirement.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	**Concept to Software Engineering:** Definition, Software Development life cycle, Project Categories, Software Project teams, Software Development process Models –Linear, Prototype, and Spiral. Project Plan, guidelines for Software planning, planning tasks, CPM/PERT, Gantt chart.	8+4
II	**Functional and Non Functional requirement, Fundamental of design concept:** Abstraction, structure. Concept of modularity, types of module. Coupling and cohesion, Coupling-content, Cohesion-coincidental, logical, temporal, procedural, communication, functional. Design notation: Bubble chart, Structure chart, HIPO diagram. Design Techniques: Stepwise Refinement, Structure Design, Integrated top-Down development.	7+4
III	**Software quality assurance:** Factors of software quality. SQA activities, Software Review Basics, Documentation & Issues. Verification and Validation: White box and Black box testing, UNIT testing, Acceptance testing, System testing, and Integration testing. Fundamental of software configuration management (SCM) & its major elements. Development and Security: Dependable System, Reliability Engineering, Real time Software Engineering, Component Based Software Engineering, Distributed Software Engineering, and Service oriented Software Engineering, Software Reuse etc.	7+4
IV	**Cost Estimation:** Issue in software cost estimation, Standard component method, Function-point method, COCOMO. Definition and concept of software reliability, software errors, faults, software reliability metrics, repair and availability. Fundamental of software maintenance, Types of software maintenance, strategies, and maintenance of object oriented system design. Concept, scope of CASE, classification of CASE tools, categories of CASE environment.	7+4

Suggested Readings:

1. Software Engineering, 10th Edition (Global Edition): Ian Sommerville -Pearson, 2016.
2. Software Engineering Concepts: Richard Fairly, Tata McGraw Hill, 1984.
3. Software Engineering: A Practitioner's Approach, Pressman Roger, Tata McGraw hill.2009.

Suggestive digital platforms web links-

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

Further Suggestions:

Programme/Class: Diploma BBA (MS)	Year: Second	Semester: Third

Course/ paper-8 (B)

Course Code: F020302T	Course Title: Project Management

Course outcomes: To equip the students with understanding of project formulation, evaluation and implementation with practical prospective.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	**Basic Concept:** Concept of a Project, categories of projects, project development cycle. The concept of project management, tools & techniques of project management. Forms of Project organisations.	8+4
II	**Project Formulation:** Project identification, Project formulation and preparation : Market and Demand estimation, market survey, demand forecasting technical factors – Material Inputs, technology, production, plant capacity, location and site, civil works, charts layouts, work schedule, cost of project, means of financing, estimates of cost, financial projections. Project Appraisal Criteria: Payback period, ARR, NPVI, IRR and social cost-benefit analysis, and risk analysis.	7+4
III	**Process of Project Appraisal:** Technical, economic, financial, legal and social appraisal of the industrial projects, problems arising due to rate of discount, wage-rates, exchange rates, treatment of taxes, social cost-benefits, treatment of risk and uncertainty, sensitivity analysis and probability approach single as well as multiple projects.	7+4
IV	**Implementation, Monitoring and Control of Projects** Project scheduling, network techniques for resource and cost budgeting and scheduling, project management teams and coordination. Monitoring and post implementation, evaluation of the projects.	7+4

Suggested Readings:

1. Prasanna Chandra, Project : Preparation, Appraisal, Budgeting and Implementation, TMH, 1987.
2. Dass Gupta & Sen, Guidelines for Project Evaluation, UNIDO, 1972
3. M. Mohsin, Project Planning and Control. Vikas Publishing, 1983.

Suggestive digital platforms web links-

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

Suggested equivalent online courses:

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Further Suggestions:

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Programme/Class: Diploma BBA (MS)	Year: Second	Semester: Third

Course/ paper-9 (A)

Course Code: F020303T	Course Title: Market Data Analysis

Course outcomes: To Understand the fundamentals of business analytical, data handling and related research issues.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	**Overview of Marketing Research:** Role of Statistical Packages in Marketing Research. Reliability and Validity of data. Basic Operation of SPSS: Data Import, Data entry, Handling Missing Values, Data Transformation and Manipulation, Data sorting and editing. Exploratory Data Analysis: Tabulation of data, Frequency table, Descriptative Ststistics, Graph and Plot forumlation.	8+4
II	**Basic Module using SPSS:** Crosstabulation, Bivariate Correlation, Simple linear Regression, Multiple Regression Analysis.	7+4
III	**Testing of Hypothesis:** P value concept, Z - test, t – test, ANOVA, Chi – Square Test, Non – parametric testing, Analyzing Categorical data.	7+4
IV	**Multivariate Analysis:** Logistic Regression, Factor Analysis, Discernment analysis, Cluster Analysis, Conjoint Analysis, Analysis of Covariance, MANOVA.	7+4

Suggested Readings:

1. Andy Field: Discovering Statistics using SPSS, Sage Publications, 4e, 2019
2. Srivastava & Rego: Business Research Methodology, TMH, 2017.
3. Narguandkar: Marketing Research: Text & Cases, TMH, 2019.

Suggestive digital platforms web links-

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

Suggested equivalent online courses:

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Further Suggestions:

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Programme/Class: Diploma BBA (MS)	Year: Second	Semester: Third

Course/ paper-9 (B)

Course Code: F020303T	Course Title: Business Law

Course outcomes: Students will familiarize with legal aspects of conducting business.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	Indian Contract Act, 1872 Contract- Meaning, Essentials, Kinds, Offer and Acceptance, Contractual Capacity, Free Consent, Consideration, Void Agreements, Quasi Contracts. Modes of discharge of contract and remedies for breach of contract. Contract of Indemnity and Guarantee. Law of Agency.	8+4
II	The Sale of Goods Act, 1930 Meaning of Contract of sale, Difference between Sale and Agreement to Sell. Conditions and Warranties, Transfer of Property in Goods, Unpaid Seller and his Rights.	7+4
III	Indian Partnership Act, 1932. Meaning and test of Partnership, Implied Authority of a partner, Position of a minor in partnership, Consequences of Non Registration of a partnership, Firm Expansion, Death and Insolvency of a partner, Dissolution of firm	7+4
IV	The Negotiable Instruments Act, 1881 Meaning, and characteristics of promissory note, bill of exchange and cheque. Holder and Holder in due course. Negotiation and assignment. Crossing of cheque, bouncing of cheques. Elements of company law; Meaning and types of companies, Formation and incorporation Memorandum of Association, Articles of Association, Prospectus.	7+4

Suggested Readings:

1. Pathak A., Legal Aspects of Business, Tata Mc GRAW HILL, 2013.
2. Kuchhal M C & Kuchhal V., Business Law, Sulatan Chand, 2018.
3. Kapoor N D, Elements of Mercantile Law, Sultan Chand, 2014.

Suggestive digital platforms web links-

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

Suggested equivalent online courses:

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Further Suggestions:

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SEMESTER IV

Year	Sem.	Subject	Part	Paper Code	Paper Name	Credit	Theory/External	
							L	P
2	IV	Course/ paper-10	A	F020401T	Information Security and Cyber Law	3	2	1
			B		Big Data analytics and Data Warehouse	3	2	1
	IV	Course/ paper-11	A	F020402T	Cloud Computing for Business	3	2	1
			B		Decision Support System	3	2	1
	IV	Course/ paper-12	A	F020403T	Financial Mathematics	3	2	1
			B		Production and Operations Management	3	2	1

Note: the teaching and internal evaluation may be performed by two teachers but external examination will be one. The external examination of three hours can be taken on two separate answer books and evaluated by two examiners

Programme/Class: Diloma BBA (MS)	Year: Second	Semester: fourth

Course/ paper-10 (A)

Course Code: F020401T	Course Title :Information security and cyber law

Course outcomes: Develop the skills to cyber security issues with a technological ground and then relate then to complex cyber world legal problems.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	Introduction- Introduction to Information Systems, Types of Information Systems, Development of Information Systems, Introduction to Information Security and CIA triad, Need for Information Security, Threats to Information Systems, Information Assurance and Security Risk Analysis, Cyber Security.	8+4
II	Application Security- (Database, E-mail and Internet), Data Security Considerations-(Backups, Archival Storage and Disposal of Data), Security Technology-(Firewall , VPNs, Intrusion Detection System), Access Control. Security Threats -Viruses, Worms, Trojan Horse, Bombs, Trapdoors, Spoofs, E-mail Viruses, Macro Viruses, Malicious Software, Network and Denial of Services Attack.	7+4
III	Introduction to E-Commerce , Threats to E-Commerce, Electronic Payment System, e- Cash, Credit/Debit Cards. Digital Signature, Cryptography Developing Secure Information Systems, Application Development Security, Information Security Governance & Risk Management, Security Architecture & Design Security Issues in Hardware, Data Storage & Downloadable Devices, Physical Security of IT Assets - Access Control, CCTV, Backup Security Measures.	7+4
IV	Information Security Standards-ISO, IT Act, Copyright Act, IPR. Cyber Crimes , Cyber Laws in India; IT Act 2000 Provisions, Intellectual Property Law, Copy Right Law , Semiconductor Law and Patent Law , Software Piracy and Software License.	7+4

Suggested Readings:

1. Cyber laws and information technology. Dr Jyoti Rattan . Bharat law house pvt ltd.
2. Cyber Security By Bhushan mayank.BPB Publication
3. Cyber Law By Dr Ashok kr Jain. Ascent Publications

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ
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Suggested equivalent online courses:
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Further Suggestions:
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Programme/Class: Diploma BBA (MS)	Year: Second	Semester: IV

Course/ paper-10 (B)

Course Code: F020401T	Course Title: BIG DATA ANALYTICS AND DATA WAREHOUSE

Course outcomes: To familiarize the students with Big data and techniques of retrieving and analyzing the data.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	**Big Data:** Introduction to Big Data, Definition, Features, Risk, Data explosion Drivers for Big Data, Industry Examples of Big Data , The Cloud and Big Data, Life Cycle for Big Data	8+4
II	**Big Data Processing Architectures**: Infrastructure challenges, Storage, Transportation, Speed or throughput, Shared-everything and shared-nothing architectures, Big Data Technology: Distributed data processing, Big Data processing requirements, Google file system, Hadoop, NoSQL, MAP Reduce etc.	7+4
III	**Introduction to Data warehouse**: Data warehousing concepts, Multidimensional Data Model, Architecture, Implementation, Components of Data warehouse, Integration of a Data Mining with Data Warehouse, Data Cube Computation and Data Generalization. Testing the Data Warehouse, Data Warehouse Recovery Models.	7+4
IV	**Implementation of Big data Analytics:** Revolutionary, Evolutionary, or Hybrid, Big Data Governance, Analytics Business Maturity Model, Big Data Visualization, and Data Scientists, Integration of Big Data and Data Warehousing.	7+4

Suggested Readings:

1. Data Warehousing in the Age of Big Data: Krish Krishnan, Elsevier.
2. Big Data, Big Analytics: Emerging Business Intelligence And Analytic Trends For Today's Businesses: Michael Minelli Michele Chambers Ambiga Dhiraj: John Wiley & Sons, Inc.

Suggestive digital platforms web links-

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

Suggested equivalent online courses:

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Further Suggestions:

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Programme/Class: Diploma BBA (MS)	Year: Second	Semester: IV

Course/ paper-11 (A)

Course Code: F020402T	Course Title: Cloud Computing for Business

Course outcomes: To familiarize the students with Big data and techniques of retrieving and analyzing the data.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	**Cloud Computing Fundamental:** Cloud computing definition, private, public and hybrid cloud. Cloud types; IaaS, PaaS, SaaS. XaaS Benefits and challenges, public vs private clouds, role of virtualization in enabling the cloud; Business Agility: Benefits and challenges to Cloud architecture. Application availability, performance, security and disaster recovery; next generation Cloud Applications.	8+4
II	**Cloud Applications:** Technologies and the processes required when deploying web services; Deploying a web service from inside and outside a cloud architecture, advantages and disadvantages Security Concepts: Confidentiality, privacy, integrity, authentication, non-repudiation, availability, access control, defence in depth, least privilege, how these concepts apply in the cloud, what these concepts mean and their importance in PaaS, IaaS and SaaS.	7+4
III	**Cloud Services Management:** Reliability, availability and security of services deployed from the cloud. Performance and scalability of services, tools and technologies used to manage cloud services deployment; Cloud Economics: Cloud Computing infrastructures available for implementing cloud based services. Economics of choosing a Cloud platform for an organization, based on application requirements, economic constraints and business needs (e.g Amazon, Microsoft and Google, Salesforce.com)	7+4
IV	**Cloud infrastructures:** public, private, hybrid. Service provider interfaces; Saas, Paas, Iaas. Virtual Data Center environments; concept, planning and design, business continuity and disaster recovery principles. Best Practice Cloud IT Model: Analysis of Case Studies when deciding to adopt cloud computing architecture. Governance of the Cloud, Governance Model, Service Governance, Making move the cloud, testing from SOA to Cloud.	7+4

Suggested Readings:

1. Gautam Shroff, Enterprise Cloud Computing Technology Architecture Applications
2. Toby Velte, Anthony Velte, Robert Elsenpeter, Cloud Computing, A Practical Approach
3. Dimitris N. Chorafas, Cloud Computing Strategies
4. Cloud Computing and SOA Convergence in Your Enterprise: A Step-by-Step Guide, David S. Linthicum, Addison Wesley

Suggestive digital platforms web links-

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

Suggested equivalent online courses:

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Further Suggestions:

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Programme/Class: Diploma BBA (MS)	Year: Second	Semester: IV

Course/ paper-11 (B)

Course Code: F020402T	Course Title: Decision Support System

Course outcomes: To acquaint the students with the various decision making techniques in structured and non-structured situations confronted by management.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	**Introduction to DSS, Decision Support System –** Definition, characteristics, components, decoupling, Decision making, DSS concepts, DSS objectives, DSS Model, Decision Support System and Management Information System, Group Decision Support Systems, Groupware and tools.	8+4
II	Computers and Decisions Rules, Application of Decision tables and Decision tree, Decision Applications, Decision Assisting Information System, Computer Assisted Decision Making, Role of Artificial Intelligence, Role of Expert System.	7+4
III	Managerial Decision Support System, Decision Structure, Analysis Techniques, Goal Seeking Analysis, Sensitivity Analysis, Data Mining, Data Warehousing.	7+4
IV	Role of DSS in Strategic Management, Programmed and Non Programmed Decisions. Problem Structure, Management Science and Decision Rules, Distinction: DSS and Programmed Systems. Contemporary role of Marketing IS, Manufacturing IS, Accounting IS, Financial IS	7+4

Suggested Readings:

1. Efrem G Mallach: Decision Support and Data Warehouse Systems, Tata McGraw Hill
2. B Ravindranath: Decision Support System & Data Warehousing

Suggestive digital platforms web links-

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

Suggested equivalent online courses:

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Further Suggestions:

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Programme/Class: Diploma BBA (MS)	Year: SECOND	Semester: FOURTH

Course/ paper-12 (A)

Course Code: F020403T	Course Title: Financial mathematics

Course outcomes: This course aims to develop the competency of understanding the impact of time value of money on valuation of financial assets and liabilities.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	Basic Principles, Arbitrage and risk aversion, interest (simple and compound, discrete and continuous), time value of money, inflation, net present value, internal rate of return (calculation by bisection and Newton-Raphson methods), Comparison of NPV and IRR .	8+4
II	Concept of Bonds, bond prices and yields, Macaulay and modified duration, term structure of interest rates: spot and forward rates, explanations of term structure, running present value, floating- rate bonds, immunization, convexity, putable and callable bonds .	7+4
III	Asset return, short selling, portfolio return, (brief introduction to expectation, variance, covariance and correlation) , random returns, portfolio mean return and variance, diversification, portfolio diagram, feasible set, Markowitz model, Two fund theorem, Capital market line, Capital Asset Pricing Model, Use of CAPM in investment analysis and as a pricing formula, Jensen's index .	7+4
IV	Forwards and futures, marking to market, currency futures, hedging (short, long, cross, rolling), optimal hedge ratio, hedging with stock index futures, Lognormal distribution, Lognormal model, Geometric Brownian motion for stock prices, Binomial tree model for stock prices, parameter estimation	7+4

Suggested Readings:

1. David G. Luenberger, Investment Science, Oxford University Press, Delhi, 1998
2. John C. Hull, Options, Futures and Other Derivatives (6 Edition), Prentice – Hall India, 2006
3. Sheldon M. Ross, An Elementary Introduction to Mathematical Finance, (2nd Edition), Cambridge University Press, USA, 2003.
4. Sankalp[Srivastava, Financial Mathematics , New Age International, (paper back). 2011.
5. Samir Kumar Chakraborty, Financial Mathematics, New Age international (Paper back), 2011.

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

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Suggested equivalent online courses:

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Further Suggestions:

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Programme/Class: Diploma BBA (MS)	Year: SECOND	Semester: Fourth

Course/ paper-12 (B)

Course Code: F020403T	Course Title: Production and operation management

Course outcomes: Students will be able to formulate and evaluate Operational decisions in any organization – Production based and/or Service Based.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	Nature & Scope of Production Management, Functions of Production Management, Production Systems, responsibilities of Production manager. Production Planning & Control (PPC), Objectives of PPC.	8+4
II	Types of manufacturing Systems: Intermitted & Continuous Systems etc, Product design & development.	7+4
III	Plant Location & Plant layout. Introduction to method study and work study. Materials Management & Inventory Control: Purchasing Economic lot quality/Economic order quantity (EOQ), Lead time, Reorder level. Brief of ABC analysis, Stock Keeping	7+4
IV	Quality Control: Quality, Quality assurance, Quality Circles, TQM, JIT, Statistical Quality Control.	7+4

Suggested Readings:

1. Production Operation managementB.S.Goel
2. Production&. Operation Management Buffa
3. Production & Operation Management S.N Chany
4. Operation Management: K. G. Gupta.

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ
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Suggested equivalent online courses:
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Further Suggestions:
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Bachelor in
BBA (Management Science)
Year 3 (Semester 5 + 6)

SEMESTER V

Year	Sem.	Subject	Part	Paper Code	Paper Name	Credit	Theory/External	
							L	P
3	V	Course/ paper-13	A	F020501T	Logistics and Supply Chain Management	3	2	1
			B		Mathematical Modeling	3	2	1
	V	Course/ paper-14	A	F020502T	Data science and Machine Learning	3	2	1
			B		Internet of Things	3	2	1
	V	Course/ paper-15	A	F020503T	Investment Analysis and Portfolio Management	3	2	1
			B		Financial Inclusion	3	2	1

Note: the teaching and internal evaluation may be performed by two teachers but external examination will be one. The external examination of three hours can be taken on two separate answer books and evaluated by two examiners

Programme/Class: Bachelor in BBA (MS)	Year: Third	Semester: V

Course/ paper-13 (A)

Course Code: F020501T	Course Title: Logistics and Supply Chain Management

Course outcomes: To familiarize the students with Big data and techniques of retrieving and analyzing the Logistics and Supply Chain Models.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	**Concept of Logistics:** Introduction, Objectives, Concept of Logistics, Objectives of logistics, Types of logistics, Concept of Logistics Management, Evolution of Logistics, Concept of Integrated Logistics, Inventory flow, Information flow, Operational Objectives of Integrated Logistics, Barriers to Integration, Organisation structure, Logistical Performance Cycle, Logistics performance cycle, E-Commerce Logistics: Introduction, Objectives, Concept of E-Commerce, Requirements of Logistics in E-Commerce.	8+4
II	**Supply Chain Management:** Introduction, Objectives, Defining Value Chain, Organisation level, Activities, Industry level, Value reference model, Concept of Supply Chain Management (SCM), Functions and Contribution of Supply Chain Management, Creating value, Enlisting suppliers to innovate, Leveraging value chain partners, Supply Chain Effectiveness and Indian Infrastructure, Framework for Supply Chain Solution, Supply Chain Relationships, Building a long-term relationship with vendors, Supplier relationship management (SRM).	7+4
III	**Demand Forecasting:** Introduction, Objectives, Concept of Demand Forecasting, Impact of Forecasts on Logistics and Supply Chain Management, Forecasting Techniques, Selecting the Appropriate Forecasting Technique.	7+4
IV	**Inventory Management:** Introduction, Objectives, Concept of Inventory, Types of Inventory, Concept of Inventory Management, Importance of inventory management, Objectives of inventory management, Different Types of Inventory Costs, Economic order quantity (EOQ), Reorder point, Safety stock	7+4

Suggested Readings:

1. Simchi-Levi, David, Xin Chen, and Julien Bramel. The Logic of Logistics: Theory, Algorithms, and Applications for Logistics and Supply Chain Management. 2nd ed. New York, NY: Springer, 2004. ISBN: 9780387221991
2. Lemm, Jeffery M. Handbook in Operations Research and Management Science. Vol. 4, Logistics of Production and Inventory. Edited by S. C. Graves, A. H. G. Rinnooy Kan, and P. H. Zipkin. Amsterdam, Netherlands: North Holland Publishing, 1993. ISBN: 9780444874726.
3. Suman Sarkar , The Supply Chain Revolution: Innovative Sourcing and Logistics for a Fiercely Competitive World, 2017

Suggestive digital platforms web links-

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

Suggested equivalent online courses:

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Further Suggestions:

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Programme/Class: Bachelor in BBA (MS)	Year: Third	Semester: V

Course/ paper-13 (B)

Course Code: F020501T	Course Title: Mathematical Modeling

Course outcomes: The basic objective of this course is to impart knowledge of mathematical modeling techniques to be used for business decisions & management.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	Need, basic outlines & techniques of mathematical modeling. Mathematical modeling through geometry, algebra, trigonometry & calculus. Limitations of mathematical modelling techniques.	8+4
II	**Linear Programming:** Introduction, formulation & solution of simple linear programming problem through graphical & simplex method. Concept of duality in linear programming. **Replacement decisions:** Introduction, methodology of replacement decisions, replacement of items that deteriorate with time (with & without change in money value). Group replacement problems.	7+4
III	**Assignment Problem :** Introduction & mathematical models for assignment. Hungarian method of assignment problem, special cases in assignment problems : maximisation case in assignment problem and prohibited assignment, unbalanced assignment problem.	7+4
IV	**Queuing (Waiting Line) Theory & Simulation:** Introduction characteristics of elementary queuing systems, management aspects of queuing theory, patterns of arrivals & departures. Single channel service system with Poison Arrivals & Poisson departure. Introduction, advantages & simple applications of statistical simulation techniques.	7+4

Suggested Readings:

1. Kapoor, V.K.: Operations Research
2. Sharma, J.K. :Operations Research
3. Taha, Hamdy A.: Operations Research, An Introduction
4. Gupta & Sharma: Operations Research

Suggestive digital platforms web links-

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

Suggested equivalent online courses:

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Further Suggestions:

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Programme/Class: Bachelor in BBA (MS)	Year: Third	Semester: V

Course/ paper-14 (A)

Course Code: F020502T	Course Title: Data science and Machine Learning

Course outcomes: The objective of this course is to impart necessary knowledge of the mathematical foundations needed for data science and develop programming skills required to build data science applications.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	**Introduction to Data Science:** Concept of Data Science, Traits of Big data, Web Scraping, Analysis vs Analytics, Reporting	4+4
II	**Introduction to Programming Tools for Data Science:** Toolkits using Python: Matplotlib, NumPy, Scikit-learn, NLTK, Visualizing Data: Bar Charts, Line Charts, Scatterplots, Working with data: Reading Files, Scraping the Web, Using APIs (Example: Using the Twitter APIs), Cleaning and Munging, Manipulating Data, Rescaling, Dimensionality Reduction	8+4
III	**Mathematical Foundations , Linear Algebra: Vectors, Matrices, Statistics:** Describing a Single Set of Data, Correlation, Simpson's Paradox, Correlation and Causation, Probability: Dependence and Independence, Conditional Probability, Bayes's Theorem, Random Variables, Continuous Distributions, The Normal Distribution, The Central Limit Theorem, Hypothesis and Inference: Statistical Hypothesis Testing, Confidence Intervals, Phacking, Bayesian Inference	9+4
IV	**Machine Learning:** Overview of Machine learning concepts – Over fitting and train/test splits, Types of Machine learning – Supervised, Unsupervised, Reinforced learning, Introduction to Bayes Theorem, Linear Regression- model assumptions, regularization (lasso, ridge, elastic net), Classification and Regression algorithms- Naïve Bayes, K-Nearest Neighbors, logistic regression, support vector machines (SVM), decision trees, and random forest, Classification Errors, Analysis of Time Series- Linear Systems Analysis, Nonlinear Dynamics, Rule Induction, Neural Networks- Learning And Generalization, Overview of Deep Learning.	8+4

Suggested Readings:

1. Jain V.K., "Data Sciences", Khanna Publishing House, Delhi.
2. Jain V.K., "Big Data and Hadoop", Khanna Publishing House, Delhi.
3. Jeeva Jose, "Machine Learning", Khanna Publishing House, Delhi.
4. Chopra Rajiv, "Machine Learning", Khanna Publishing House, Delhi.

Suggestive digital platforms web links-

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

Suggested equivalent online courses:

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Further Suggestions:

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Programme/Class: Bachelor in BBA (MS)	Year: Third	Semester: VI

Course/ paper-14 (B)

Course Code: F020502T	Course Title: INTERNET OF THINGS

Course outcomes: The objective of this course is to impart necessary and practical knowledge of components of Internet of Things and develop skills required to build real-life IoT based projects.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	**Introduction to IoT :** Architectural Overview, Design principles and needed capabilities, IoT Applications, Sensing, Actuation, Basics of Networking, M2M and IoT Technology Fundamentals- Devices and gateways, Data management, Business processes in IoT, Everything as a Service(XaaS), Role of Cloud in IoT, Security aspects in IoT.	8+4
II	**Elements of IoT:** Hardware Components- Computing (Arduino, Raspberry Pi), Communication, Sensing, Actuation, I/O interfaces. Software Components- Programming API's (using Python/Node.js/Arduino) for Communication Protocols-MQTT, ZigBee, Bluetooth, CoAP, UDP, TCP.	7+4
III	**IoT Application Development:** Solution framework for IoT applications- Implementation of Device integration, Data acquisition and integration, Device data storage- Unstructured data storage on cloud/local server, Authentication, authorization of devices.	7+4
IV	Security and Privacy for IOT, Block chain Technology, Challenges Associated with Secure IoT Deployment, Communicational Technologies and Protocols for IOT	7+4

Suggested Readings:

1. Vijay Madisetti, Arshdeep Bahga, İnternet of Things, "A Hands on Approach", University Press
2. Dr. SRN Reddy, Rachit Thukral and Manasi Mishra, "Introduction to Internet of Things: A practical Approach", ETI Labs
3. Jeeva Jose, "Internet of Things", Khanna Publishing House, Delhi
4. Adrian McEwen, "Designing the Internet of Things", Wiley
5. Raj Kamal, "Internet of Things: Architecture and Design", McGraw Hill

Suggestive digital platforms web links-

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

Suggested equivalent online courses:

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Further Suggestions:

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Programme/Class: Bachelor in BBA (MS)	Year: Third	Semester: Fifth

Course/ paper-15 (A)

Course Code: F020503T	Course Title: Investment analysis and portfolio management

Course outcomes: To develop competencies for analyzing different investment opportunities and construct an optimal portfolio of investments as per risk profile and investment objectives.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	Investment Alternatives, Investment attributes, Investment Vs. Speculation Vs. Gambling, Primary and Secondary market and its operations, NSE and BSE, Buying and Selling shares, Stock market Indices. Corporate Debt Market and Money market. Risk and Return- Risk and Return of a single asset and portfolio, CAPM (Practical Problems).	8+4
II	Basic valuation model, valuation of Bonds/Debentures, YTM, Bond Duration. Valuation of Preference Shares, Valuation of Ordinary Shares. Other approaches to valuation of shares	7+4
III	Fundamental Analysis- Macroeconomic Analysis, Industry Analysis, Company Analysis. Technical AnalysisCharting technique, Technical Indicators, Trading Rules. Efficient Market Hypothesis- Random Walk and search for theory, efficient market, weak form, semi strong form and strong form efficient market Hypothesis	7+4
IV	Traditional and Modern portfolio management. Portfolio Risk and return, Portfolio Diversification, Optimal portfolio, CAPM- Basic assumptions, CML, SML. Arbitrage pricing theorySpecification of Investment objectives and constraints, Formulation of Portfolio strategy, Selection of securities, Portfolio execution, Portfolio Revision	7+4

Suggested Readings:

1. Ranganatham - Security Analysis and Portfolio Management (Pearson Education, 2st Ed.)
2. Chandra P - Investment Analysis and Portfolio Management (Tata Mc Graw Hill, 2008)
3. Sudhindra bhat: Security Analysis and Portfolio Management, Excel Books.
4. Barua, Raghunathan and Verma : Portfolio management , Tata McGraw Hill, Delhi.
5. Clark, James Francis : Investment – Analysis and Management, McGraw Hill, International Edition, New York.
6. Fabozzi, Frank J : Investment Management, Prentice hall, International Edition, New York.
7. Fischer, D.E. and Jordan R.J. : Security Analysis and Portfolio Management, Prentice hall, Delhi.
8. Sharpe, William F, Fordon J Alexander and J. V Bailly : Investments, Prentice Hall, Delhi.

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ
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Suggested equivalent online courses:
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Further Suggestions:
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Programme/Class: Bachelor in BBA (MS)	Year: third	Semester: Fifth

Course/ paper-15 (B)

Course Code: F020503T	Course Title: Financial inclusion

Course outcomes: The main objective of this course is to help students to learn the various financial services and their role in the overall financial system n financial inclusions.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	Financial System and Financial Markets- Types of Markets, Market efficiency, Interlinkage in the Financial Markets, Types of Financial Assets, Issuer's Considerations, Investor's Considerations, Money market- its players, Indian Money Market, Money market Instruments, Indian Capital Markets.	8+4
II	Financial Services- Merchant Banking- Registration of Merchant Bankers, General Obligations and responsibilities, Procedure for Inspection, Procedure for action in case of default, Pre Issue obligations, Post Issue obligations.	7+4
III	Factoring- Main Features, Types mechanism and advantages, Terms and conditions of factoring contract. Forefaiting- Main features, mechanism and advantages. Depositories- Basic features, mechanism, SEBI guidelines. Venture Capital- Concept and advantages.	7+4
IV	Mutual Funds- Classification of Mutual funds, Mutual Funds returns, sale and purchase of Mutual Funds shares, Holding Period Returns- NAV, Calculation of NAV. Mutual Funds regulation-SEBI guidelines. Credit Rating- Rating of Debt Instruments, Need and Benefits of Credit Rating. Rating Agencies in India- Objectives, Symbols, Rating methodology of Rating Agency.	7+4

Suggested Readings:

1. Nalini P.Tripathi : Financial Instruments and Services, PHI Learning Pvt. Ltd
2. Batra and Dangwal : Financial Services, Deep and Deep Publications
3. M.Y.Khan : Financial Services, Tata McGraw-Hill Education
4. Kohn- Financial Institutions & Market- Tata McGraw-Hill Education

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ
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Suggested equivalent online courses:
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Further Suggestions:
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SEMESTER VI

Year	Sem.	Subject	Part	Paper Code	Paper Name	Credit	Theory/External	
							L	P
3	VI	Course/ paper-16	A	F020601T	Strategic Management	3	2	1
			B		Data Mining & Business Intelligence	3	2	1
	VI	Course/ paper-17	A	F020602T	Artificial Intelligence in business	3	3	0
			B		Business Ethics & Governance	3	3	0
	VI	Course/ paper-18	A	F020603T	Advanced Data Base Management System	3	2	1
			B		Global Financial Analysis	3	2	1

Note: the teaching and internal evaluation may be performed by two teachers but external examination will be one. The external examination of three hours can be taken on two separate answer books and evaluated by two examiners

Programme/Class: Bachelor in BBA (MS)	Year: Third	Semester: VI

Course/ paper-16 (A)

Course Code: F020601T	Course Title: Strategic management

Course outcomes: To acquaint the students with the concept of strategy, issues and challenges.With a 360 degree perspective on environment scan, formulation, implementation, evaluation and control, a learner would develop an insight and would equip them to analyze, synthesize and take a way forward strategically.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	Introductory concepts: Corporate Strategy. Strategic Decision Making. Modifying Scope of the Firm- Corporate advantage. Mergers and acquisitions. Strategic Alliance. Internationalization.	8+4
II	Influencers & Outcomes of Corporate Strategy- Structure and Corporate Strategy. Knowledge Management. Family & Micro Business Strategy. Corporate venturing. Blue ocean strategy.	7+4
III	Leadership and Corporate Governance- Strategic Leadership. Corporate governance. Strategic CSR	7+4
IV	Strategic Planning & Control- Strategic Planning. Change Management. Strategic Control.	7+4

Suggested Readings:

1. Michael Porter: Competitive Advantage Simon and Schuster.
2. Thomas Jacobs: Strategic Management-Text & Cases; Pearson
3. Azhar Kazmi : Strategic Management and Business Policy, Tata Mcgraw Hill.
4. N.Chandrasekaran,P.S.Ananthanarayanan:Strategicmanagement, Oxford University Press.
5. P.K.Ghosh: Business Policy and Strategic Management.
6. Andrews : Concept of Corporate Strategy, Irwin
7. Ansoff, H. Ighor : Implanting Strategic Management, Prentice Hall 8. P. Subha Rao : Strategic Management, Himalaya Publication House

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

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Suggested equivalent online courses:

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Further Suggestions:

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Programme/Class: Bachelor in BBA (MS)	Year: Third	Semester: VI

Course/ paper-16 (B)

Course Code: F020601T	Course Title: Data Mining & Business Intelligence

Course outcomes: To familiarize the students with advanced databases and techniques of retrieving and storing information.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	**Introduction to Data Mining:** Definition, Features, Classification of Data Mining, Applications and trends in data mining, Knowledge Discovery Process, Data Mining Techniques. Data Pre-processing: Descriptive Data Summarization, Data Cleaning, Data Integration and Transformation, Data Reduction Data Mining Functionalities: Mining Frequent Patterns, Associations and Correlations, Classification and Prediction, Cluster Analysis.	8+4
II	**Introduction to Data warehouse:** Data warehousing concepts, Multidimensional Data Model, Architecture, Implementation, Components of Data warehouse, Integration of a Data Mining with Data Warehouse, Data Cube Computation and Data Generalization.	7+4
III	**Classification and Predication:** Decision tree induction, Bayesian Classification, Rule case Classification, Classification by Back propagation, Genetic Algorithm, Predication – Linear and Non- Linear Regression. Cluster Analysis: Types of Data in Cluster Analysis, Clustering Methods - Partitioning, Hierarchical, Density – Based, Grid – Based, Model – based, Outlier Analysis.	7+4
IV	**On - Line Analytical Processing:** Introduction, OLAP Server, MOLAP, ROLAP, HOLAP, Managed Query Environment, Features of OLAP, Comparison between OLTP and OLAP, Testing the Data Warehouse, Data Warehouse Recovery Models.	7+4

Suggested Readings:

1. Amitesh Sinha: Data Warehousing
2. Efrem G. Mallach: Decision Support System & Data Warehouse Systems
3. Ali ABM Shawkat and Wasimi Saleh A: Data Mining; Method and Technique, Cengage Publication
4. S. Rizzi & M. Golfarelli: Data Warehouse Design; Modern Principles and Methodologies, Tata McGraw-Hill Education

Suggestive digital platforms web links-

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

Suggested equivalent online courses:

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Further Suggestions:

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Programme/Class: Bachelor in BBA (MS)	Year: Third	Semester: VI

Course/ paper-17 (A)

Course Code: F020602T	Course Title: Artificial Intelligence in business

Course outcomes: The conceptual understanding of AI system and its difference with the human mind will help student appreciate the gravity of the implications for the business in the coming decades. Going through the instructions on the utility of AI as business tools the student would stand out as a valuable asset to their future employers. The ethical dimensions involved should also sensitize the students on the challenges involved for value-based business practices. In the frightening and uncertain times of AI era the student should find solace in the infallibility and supremeness of human consciousness and take the AI challenge boldly and positively.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	**HUMAN VERSUS MACHINE :** What matters to a machine; What makes a mind; Looking into the Future; Programs that Write Programs; Four Basic Drives; The Intelligence Explosion; The Point of No Return; The Law of Accelerating Returns; The Singularitarian; The End of Human Era; The Cyber Ecosystem; Telemigration, Automation and the Transformation; Digitech Impulse.	8+4
II	**USING AI TO ATTRACT, PERSUADE, AND RETAIN CUSTOMER** **Market Research:** Marketplace Segmentation; Raising Awareness; Social Media Engagement; In Real Life; The B2B World; The In-Store Experience; On the Phone; The Onsite Experience—Web Analytics; Merchandising; Closing the Deal; Back to the Beginning: Attribution; Growing Customer Expectations; Retention and Churn; Many Unhappy Returns; Customer Sentiment; Customer Service; Predictive Customer Service; The AI Business Platform	7+4
III	**SOLVING THE BUSINESS PROBLEMS** Application of AI: Finance, Manufacturing, Transportation, Energy, Healthcare, Communication, Law, and Defence. One-to-One Marketing; One-to-Many Advertising; The Four Ps; The Customer Journey; Branding; Your Bot Is Your Brand; Marketing Mix Modelling; Econometrics; Customer Lifetime Value.	7+4
IV	**THE CHALLENGES:** Machine Mistakes; Human Mistakes; The Ethics of AI; What Machines Haven't Learned Yet; How to Train a Dragon; The Human Advantage; AI to Leverage Humans; Collaboration at Work; Your Role as Manager; AI for Best Practices.	7+4

Suggested Readings:

1. James Barrat (2015); Our Final Invention; Pan Macmillan India, 1st Edition.
2. Garry K & Mig G. (2017); Deep Thinking: Where Machine Intelligence Ends and Human Creativity Begins; John Murray Publications, 1st Edition.
3. Jim Sterne, G.A. Poe & Gildan M. (2018); Artificial Intelligence for Marketing; Gildan Media- Audible Book, 1st Edition.
4. Max Tegmark (2017); Life 3.0: Being Human in the Age of AI; Knopf, 1st Edition.

Suggestive digital platforms web links-

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

Suggested equivalent online courses:

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Further Suggestions:

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Programme/Class: Bachelor in BBA (MS)	Year: Third	Semester: VI

Course/ paper-17 (B)

Course Code: F020602T	Course Title:Business Ethics &Goverance

Course outcomes: Students will be able to incorporate importance of ethics in business world today and it will help them take ethical decisions in the organization. They will have a better understanding of CSR, Corporate Governance and Sustainability issues faced by the organizations.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 3-0-0

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	Business Ethics- An overview-Concept, nature, evolving ethical values, Arguments against business Ethics.	12
II	Business and Society Changing Concepts and Objectives of Business, Professionalization, Business ethics.	11
III	Gandhian Philosophy, Organizational Culture, Technological Development and Social Change, Social Responsibility of Business, Social Audit	11
IV	Relationship between Ethics & Corporate Excellence- Corporate Mission Statement, Code of Ethics, need for code of ethics ,Types of code of ethics ,Organizational culture, Characteristics of organizational culture, TQM: Benefits and principles.	11

Suggested Readings:

1. Chakraborty , S.K. : ,Foundations of management Work - Contributions from Indian Thought: Himalaya Publishing House Delhi 1998
2. Griffiths , B. : Themarriage of East and West , colling London 1985
3. Gandhi , M.K. : The Study of My Experience with Truth, Navjivan Publishing House , Ahmedabad , 1972
4. Velasquez , M.G. : Business Ethics
5. Sekhar , R.C. : Ethical Choices in Business .

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

Suggested equivalent online courses:

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Further Suggestions:

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Programme/Class: Bachelor in BBA (MS)	Year: Third	Semester: VI

Course/ paper-18 (A)

Course Code: F020603T	Course Title: Advanced Data Base Management System

Course outcomes: To study the further database techniques beyond which covered in the first year, and thus to acquaint the students with some relatively advanced issues. At the end of the course students should be able to: gain an awareness of the basic issues in objected oriented data models, learn about the Web-DBMS integration technology and XML for Internet database applications.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-1

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	Overview of Object-Oriented concepts & characteristics, Objects, OIDs and reference types, Database design for ORDBMS, Comparing RDBMS, OODBMS & ORDBMS, Advance Database Management System – Concepts & Architecture, Spatial data management, Web based systems, Overview of client server architecture, Databases and web architecture, N-tier Architecture, Business logic – SOAP, Multimedia databases, Mobile database etc.	8+4
II	Parallel databases Introduction, Parallel database architecture, I/O parallelism Inter-query and Intra-query parallelism, Inter operational and Intra- operational parallelism, Design of parallel systems, Parallel databases mining.	7+4
III	Distributed Databases Introduction, DDBMS architectures, Homogeneous and Heterogeneous Databases, Distributed data storage, Distributed transactions, Commit protocols, Availability, Concurrency control & recovery in distributed databases, Directory systems	7+4
IV	Knowledge base Systems Integration of expert in database application & object database overview, Introduction to Data warehousing, Architecture, Dimensional data modelling- star, snowflake schemas, fact constellation, OLAP and data cubes, Operations on cubes Data pre-processing, Introduction to Mobile Database management, Web data management, Cloud data management	7+4

Suggested Readings:

1. Database systems : "Design implementation and management"- Rob Coronel, 4 th Edition, (Thomson Learning Press)
2. Database Management Systems - Raghu Ramkrishnan, Johannes Gehrke Second Edition, (McGraw Hill International)
3. Database Management System - Alexis Leaon, Mathews Leon, (leon press)
4. Fundamentals of Database Systems - Remez Elmasri , Shamkant Navathe

Suggestive digital platforms web links-

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

Suggested equivalent online courses:

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Further Suggestions:

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Programme/Class: Bachelor in BBA (MS)	Year: THIRD	Semester: VI

Course/ paper-18 (B)

Course Code: F020603T	Course Title: Global financial analysis

Course outcomes: The objective of the course is to accustom the students with the international capital market environment and it's working. How international funds management is being done.

Credits: 3	Compulsory
Max. Marks: 25+75	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 3-0-0

Unit	Topics	No. of Lectures Total=45 (30 Theory+15 Practical)
I	Evolution of the Multinational Corporation, the role of global finance manager, integration of financial markets- reasons, benefits, costs and effects. Balance of Payments- categories, Factors affecting the components of BOP, BOP compilation, coping with the current account deficit.	12
II	Alternative exchange rate systems- Free float, Managed Float, Target Zone Arrangement, Fixed Rate system. A brief history of the International Monetary System. European Monetary system and Monetary Union. IMF and World Bank- Organization and financing schemes. Arbitrage and the Law of one price- Purchasing Power Parity, Fisher effect, International Fisher effect, Interest rate parity and Forward rates as unbiased predictions of future spot rates.	11
III	Foreign exchange risk- Measuring and Managing Translation, Transactions and economic exposures. Financial Swaps. International Trade, Financing and Export financing. International Financial Instruments	11
IV	Multinational Working capital Management- Current Asset Management and Short-term Financing. Capital Budgeting for the Multinational Corporation- Alternative capital budgeting framework. Issues in foreign Investment Analysis. Political Risk Analysis.	11

Suggested Readings:

1. Apte, P.G. : International Financial Management, Tata McGraw Hill, New Delhi,
2. Buckley, Adrian : Multinational Finance, Prentice Hall, New Delhi.
3. Eitman, D.K. and A.I. Stenehill : Multinational Business Cash Finance, Addison Wesley, New York.
4. Henning, C.N., W Piggot and W.H. Scott : International Financial Management, McGraw Hill, International Edition.
5. Rodriqufe, R.M. and E.E. Carter : International Financial Management, Prentice Hall, International Edition.
6. Shaprio, Alan. C : Multinational Financial Management, Prentice Hall, New Delhi.

Suggested Continuous Evaluation Methods: Assignments, Presentation, Practicals and MCQ

Suggested equivalent online courses:

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Further Suggestions:

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